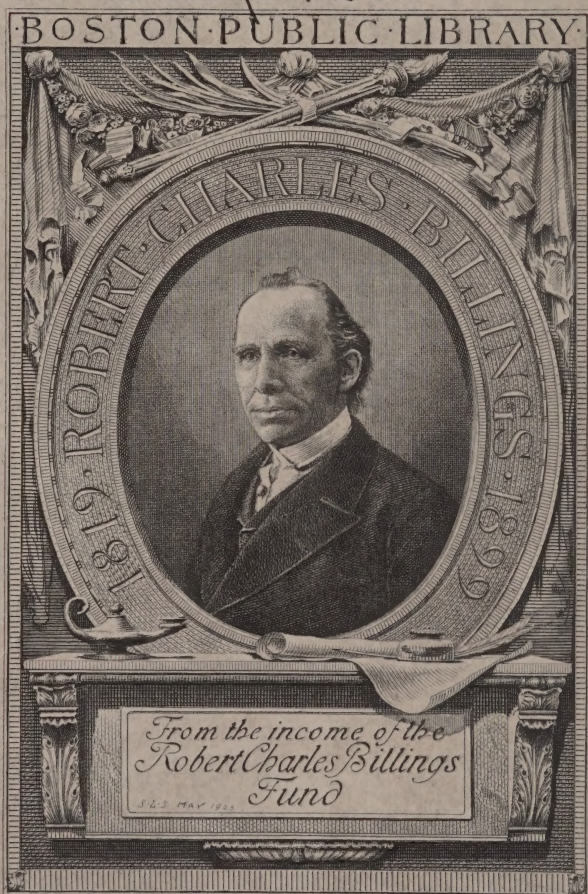


— HOW TO BE —  
AN ATHLETE  
HAMMETT — LUNDGREN



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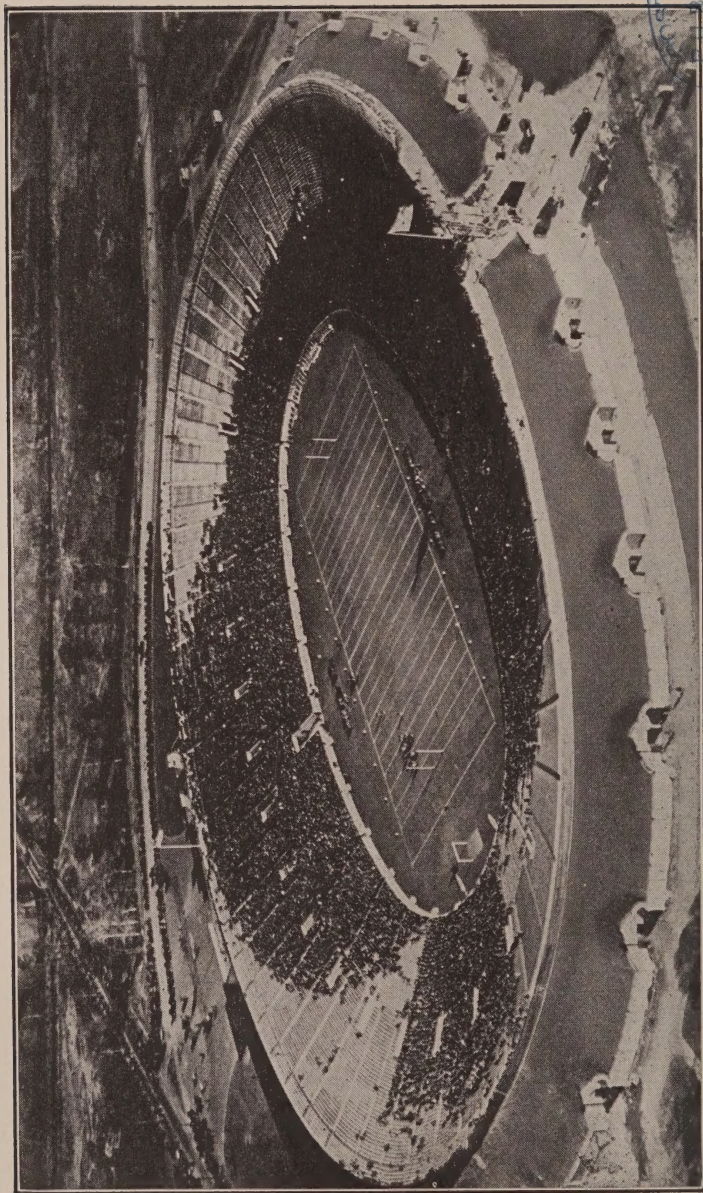
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# HOW TO BE AN ATHLETE

BY

CHARLES EDWARD HAMMETT

DIRECTOR OF ATHLETICS

ALLEGHENY COLLEGE

AND

CARL LEONARD LUNDGREN

## HEAD BASEBALL COACH

UNIVERSITY OF ILLINOIS

WITH INTRODUCTION

BY

JOHN L. GRIFFITH

COMMISSIONER OF ATHLETICS

INTERCOLLEGIATE CONFERENCE

D. C. HEATH AND COMPANY

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## PREFACE

History records 776 B.C. as the earliest record of Athletic Contests and we are told that, "Corœbus was the victor. His statue is at Olympia and his grave is on the borders of Elis."

"The Olympian games took place every fourth year, in midsummer. A sacred truce was proclaimed for an entire month in order that the thousands of spectators from every part of Greece might arrive and depart in safety. Woe betide the man who harmed one of the pilgrims on his sacred journey! Zeus himself, the protector of strangers, would visit with divine wrath the impious offender.

"The festival was in charge of judges appointed by the people of Elis. One of their most important duties was an examination of the athletes who wished to enter the various contests. No one convicted of crime or of the sin of impiety, could be admitted. The candidates had also to prove that they were qualified for the severe tests by a long and hard training. Once accepted as competitors, they could not withdraw. The man who shrank back when the hour of trial arrived was considered a coward and punished with a heavy fine.

"The games occupied five days, beginning with the contests in running. There was a short-distance dash through the length of the stadium, a quarter-mile race, and also a longer race, probably for two or three miles. Then followed a contest consisting of five events: the long jump, hurling the discus, throwing the javelin, running, and wrestling. It is not known how victory in these five events taken together was decided. In the

long jump, weights like dumb-bells were held in the hands, the swing of the weights being used to assist the spring. The discus, which weighed about twelve pounds, was sometimes hurled more than one hundred feet.

"The Olympian festival, in spirit and principle, was profoundly religious. The display of manly strength was considered a spectacle most pleasing to the gods. For this reason a Greek athlete could gain no higher honor than a victory in the games. Though rewarded at Olympia with only a wreath of wild olive, the conqueror returned home to receive the gifts and veneration of his fellow-citizens. Poets celebrated his victories in noble odes. Sculptors reproduced his triumphs in stone and bronze. To the end of his days he was a distinguished man." <sup>1</sup>

The individual athlete is no less a hero today than he was twenty centuries ago, but the underlying principle of present day athletics is the purpose of an equal opportunity for every boy, training for the masses rather than for the individual player. The aim of the authors in preparing this book is to present the basic principles of athletics in a form in which they may be helpful to the athlete himself as well as his coach.

This is believed to be the first book to provide a comprehensive treatment of athletics as now followed in American schools, and it is presented with the belief that it will be suggestive to the coach and will provide instruction for that body of students which each year trains for positions upon the teams which represent its school.

THE AUTHORS

<sup>1</sup> *Ancient History* by Hutton Webster.

## INTRODUCTION

This is an era that is marked by the growth in importance and content of activities in physical education in general and athletic sports in particular; it is an age which is witnessing the construction of thousands of field houses and gymnasia, playgrounds and stadia. While the inter-school, inter-collegiate, and the great professional games are given emphasis in the press and in public thought, the play activities of the masses are keeping pace with this other phase of physical education. In fact, intramural athletics and formal work in the gymnasium have both been benefited and in some cases made possible by the public spectacles, for the varsity player serves as an example and the athletic associations frequently finance the intramural and gymnasium departments. It would be a regrettable fact if only a few played the games while the thousands looked on and never engaged as participants in the great American sports, but since less than two per cent of the sporting goods equipment manufactured is used by the professional players, and ninety-eight per cent is used by the school and college men and the other amateur players, as yet we have no occasion for alarm.

The authors of this book have in a very concise manner discussed the technique of our major sports. Thus the young athletes who will read these pages may profit from the experience of older men who have successfully played the games themselves and likewise have for years taught others how to play. It is needless to suggest that it is better for a boy to learn to execute the fundamentals of the game in accordance with the best school of thought

than to be forced to learn proper methods by the system of trial and error.

Much may be said of the value of calisthenics and gymnastics as a part of the educational plan; in fact, no department of physical education is complete that does not provide for the training that goes with these activities, but, nevertheless, the American people prefer to stress athletics. It is well that this is so, because of the great character developing qualities of our favorite sports. With the development of athletics which affect so many, it is doubtful if any other agency is today influencing the manners and morals of our people as are the games which are contested on the playing fields of America. We are wont to think of the value of athletic participation in terms of the contestants, but we should look farther and note also, the influence of the games on those who witness the competitions and on those who read the story of the encounters in the papers. It is tremendously worth while that the qualities of loyalty, self-sacrifice, devotion to a cause, courage, and good sportsmanship, all of which are so conspicuously portrayed in our school and college games, should be kept before the public mind.

Athletics in the schools and colleges a quarter of a century ago met with almost universal disapproval from the administrative heads of the educational institutions. Later the games were tolerated but not encouraged. In this period the students managed and organized the teams, employed the coaches and expended the profits of the games. Later, faculty regulation was recognized as necessary if athletes were to be kept free from certain abuses. Today the physical education program which includes inter-school and inter-collegiate athletics is becoming recognized as a definite part of the educational plan. It seems to be generally accepted that the function of the college is to train for citizenship and not solely to advance intellectualism. With this understand-

ing of the purpose of education, it may be proposed that physical education, the purpose of which is physical and moral training, has a place in the pedagogical scheme. With this new conception of physical education, there is developing in this country a trained class of physical educators, as Dr. Joseph E. Raycroft, Princeton University; W. A. Alexander, Georgia School of Technology; D. X. Bible, Texas Agricultural and Mechanical Arts; Chester L. Brewer, University of California; George A. Huff, University of Illinois; M. F. Ahearn, Kansas State Agricultural College; A. A. Stagg, University of Chicago; C. W. Savage, Oberlin College, and Fielding H. Yost, University of Michigan. All of these men have coached athletic teams or are still actively engaged in coaching at the present time. These men and thousands of others in the United States are rendering a service to the youth of the land and, in fact, to the Nation itself that can hardly be overestimated.

Our athletics may constitute a school of bad manners where boys learn to steal, and lie, and cheat; to boast when they win and whine when they lose; or our athletics may be so conducted that the principles of fair play will be stressed; that the boys will learn to play the game according to the rules, to be magnanimous in victory and uncomplaining in defeat. The authors of this book have not only outlined approved methods of play but have suggested only fair and sportsmanlike methods of executing the different activities.

JOHN L. GRIFFITH,  
*Commissioner of Athletics,*  
*Intercollegiate Conference.*



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# FIELD AND TRACK ATHLETICS

## CHAPTER I

### WHAT EVENT TO SELECT

If you are very fast, try the sprints, no matter whether you are tall or short, light or heavy. Sprinters are born, not made, and their build has nothing to do with their performance. Duffy was a little man, Wefers and Ramsdell big fellows, Gill and Carey of medium size. A boy is fast because of the muscles and nerves he inherits. Training, through which he acquires technique, will make him faster, but no amount of training will make a champion of a naturally slow runner.

If you are not quite fast enough to beat your comrades, try the hurdles, especially if you have a good spring and your legs are strong. Such a boy has ten chances in the hurdles to one in the sprints. A boy at the Hotchkiss School in '95 consistently ran the hundred half a yard behind his teammate. On advice he took up the hurdles, and the next season won both the High and Low Hurdles at New Haven in the State Interscholastics. Technique in the hurdles is difficult to acquire, and comparatively few try them. That makes your chances greater than in the sprints.

If you are fast and strong but lack the spring a hurdler must have, try the 440, especially if you are above medium height. Most champion 440 men are above

medium height. Long legs with good wind count more in this race than in any other.

If you are moderately fast and fairly strong, try the middle and distance runs. Any boy can become a distance runner but it takes more work than any of the other runs. Distance runners are made, not born, and work makes them. Work brings the stamina and the wind and muscle. Of course there are boys who are born for distance running, just as others are born for sprinting. They inherit the physique and endurance for a long race and are the ones who make champions if they work. Boys of this type who do not work are beaten every year by pluggers who work. The distance runs are a plugger's race, and they go to the boy who has the grit and determination to train long and hard. A distance runner can hardly get too much running. He should run almost the entire year.

If you have a fine spring in your legs try the High Jump. In this event springy muscles are of the first importance. In the Western Olympic Tryouts at Northwestern University Field in 1912, Richards cleared six feet without any form at all, with just his natural spring. Later, Murphy made an Olympic Champion of him. There is no use for any boy to try the high jump unless he has this spring. Any boy can acquire form, which counts for a great deal in the high jump, as it does in everything else.

If strong in the arms and shoulders and of medium height or a little above, you should be able to do well in the Pole Vault. Comparatively few boys take to this event and for that reason it offers better chances than most others. As a rule, big boys are too heavy to star in it, and long, rangy boys have too much leg to lift. Boys of average build who handle themselves well, have the best chance. Such a boy can become a good pole vaulter, but it is the most technical of all events and therefore requires faithful practice.

If you are big and heavy you may be too slow for any of the events which have been mentioned, but the Field Events will suit you. The Hammer is an ideal game for tall, strong boys, and especially boys with long arms and legs. A big boy with long arms is especially adapted to the Discus, whether he is very strong or not. Boys of this type who have acquired the technique of discus throwing often beat more powerful athletes.

Any boy, sound of body, no matter what his build, can play football with little risk against boys of his own weight, and of all our sports there is none that equals it in the development of manly qualities.

The coach or captain will determine where you are to play, but he will be guided by the principle of big boys in the line with fast and lighter boys in the backfield. The line must bear the brunt of attack and defense and the coach must put his battleships there. Say nothing and do your best wherever you are placed. You will soon discover what position you can play the best and where you belong for the best interests of the team.

Build has little significance in football. Tall, rangy fellows who are shifty on their feet make great tackles, but they also make great centers, guards and ends. Short, heavy lads do better at guard or center than at tackle, but this depends upon so many things besides build—upon fighting spirit, brains and determination—that a coach cares little whether a boy is tall or short, heavy or light. In the backfield every coach looks for speed, but neither does speed depend upon build, for all sizes of men may be fast. The coach does not care about your size so long as you are fast. Of course there are more important assets than speed, but speed is the physical qualification of the backfield as distinguished from the line. If the coach will allow it, play the position you like, no matter what your build.

The center in Basketball should be the fastest and shiftest boy on the team. This is not often the case,

however, because the fastest and shiftiest boys are made forwards, since the forward's work is to slip away from his opponent and pass or cage the ball. The center is usually the player who can reach the highest on the tip-off. If he is fast, so much the better, but most teams prefer a center who can get the tip-off even if he is slow. This is a mistake and a fast, shifty center who plays a fine game is more valuable to a team than a slow one whose chief asset is his ability to get the tip-off. The tip-off does not help much against a good team because the latter simply moves its forwards into defensive territory, where they get the ball as often as their opponents and where they are between the opponents and the goal.

Small men are at a disadvantage in playing guard because tall forwards can keep the ball away from them. The huskiest boys on the team should be the guards, because they enter into the attack almost as much as the forwards, but they maintain a strategic position and do not cover so much space, so need not be as fast and shifty.

If you are tall and strong with long arms and legs, you can be a line man in football, a discus thrower or shot putter. If fast, you may also be center in basketball, a hurdler, quarter miler, distance runner, or perhaps a high jumper. If short and heavy, you are suited for center, guard or end in football, or if fast, for half back, for a shot putter, or sprinter, and in basketball any position except center. If of medium height and build you can try for anything, but in football your chances should be better at end and in the backfield than in the line. In Field Events you will do better at the jumps and vaults than at the weights.

## CHAPTER II

### DIET AND TRAINING

If you want to be an athlete you must get plenty of sleep. Activity of any kind uses up energy. Sleep restores it. The more work you do the more sleep you need. Nine hours is about right for the average athlete, but every boy is a law unto himself. Some need more sleep than others. You can tell by the way you feel. Some boys pride themselves upon being able to go with six or seven hours of sleep. They can do this for a time, but they pay up for it afterwards and "crack" all at once.

Eat good nourishing food and eat at mealtime only. Your body is an engine, producing energy, which you use both in mental and physical activity. Food is the crude fuel. The digestive organs refine it, the organs of assimilation store it up in your tissues, ready for use when you exercise, for at such times the body consumes its fuel just as a stove burns coal.

Much nonsense has been written about an athlete's diet. An athlete needs plenty of tissue-forming food because he breaks down more tissue than a boy who does not exercise. Meat, eggs, beans, peas, bread and milk are tissue-forming foods. Milk agrees with most people but not with everyone. If you wish, take one glass with a meal. Runners better not drink it once they get on edge. Eat vegetables, particularly watery vegetables having a good deal of waste-fibre, such as carrots, parsnips, turnips, and the spinach, dock and beet tops greens with plenty of olive oil. Also fruit in season. A diet of tissue-

forming foods alone brings on biliousness. Many athletes are bothered by constipation notwithstanding their strenuous exercise. It is because they eat too much bread and meat and too little vegetable food. A few years ago a training table was considered indispensable for college teams. The "Big Ten," the leading universities in the Middle West—Chicago, Minnesota, Illinois, etc.—demonstrated that this is not essential. They dropped the training table, yet they stand as high in athletics as does any section of the country.

Eat plain food, but avoid fried meats because the fat prevents the meat from being readily digested. Also avoid pies and pastry because they interfere with digestion. If there is one thing above all others that an athlete must be watchful about it is his stomach. Nothing weakens him like indigestion. Foolish indulgence in indigestible food, eating between meals, and lack of sleep lose many contests every year.

Athletes need more food than other persons but most of them eat too much. The surplus food decays in the stomach and loads the blood with toxins which bring a slow-up. An athlete may eat candy if he eats it at the right time and does not eat too much. The proper time is immediately after a meal. Eat two or three small pieces of chocolate or of some pure candy occasionally. That is enough. Never eat candy just before a meal or between meals. As the season progresses and you get "on edge" you must be particularly careful about your eating. A slight indiscretion then will bring on an attack of indigestion.

Ice cream is all right for dessert. Eat it slowly. With sundaes and sodas at the drug store you take a risk. They are likely to bring on an attack of acute indigestion. You will do well to avoid such confections during the season.

Don't gulp down a quantity of ice water with your food. Drink as much water as you want and drink it

at meal time if you wish, but drink slowly and not too much at a draught.

A good menu may be listed as follows:

**Breakfast.**—Fruit, in season; cereal, small portion; either steak, chops, dropped eggs on toast or soft-boiled eggs; one baked potato; bread or toast; milk, cocoa or coffee. No pork, ham, chipped beef or sausage, nor meat croquettes and hot rolls.

**Lunch.**—A good nourishing meal. Steak or chops; sometimes cold beef, lamb, mutton or chicken; corned beef hash occasionally; browned or baked potatoes; graham bread or toast; baked apple, apple sauce or prunes; boiled rice and milk.

**Dinner.**—Soup, roast beef, lamb, mutton or chicken; mashed or boiled potatoes; vegetables, a green salad, lettuce, lettuce-tomato, celery or apple, etc., with plenty of olive oil. No pastry, cakes or potato salad. For dessert, ice cream, plain puddings, such as apple, tapioca, rice or bread pudding, dates or figs; milk or cocoa.

**Smoking.**—If you want to be a real athlete you must not smoke. Physicians may differ as to the effects of tobacco, but trainers do not. Neither do trainers theorize. They have seen too many smokers “crack” when the race was hardest. Of course there are athletes who smoke, but you do not find them at the top. They are like——

“The poor benighted Hindoo  
They do the best they kin do.”

That best is sometimes good enough to beat boys of less natural ability. But when they meet real athletes they “break” and bring on defeat.

## CHAPTER III

### HOW TO TRAIN FOR TRACK

**Sprints.**—Take a little preliminary training, three days a week, for about three weeks. Take it in the country, across the fields if you can. You will grow tired enough of the track before the season is over. Besides, turf is springy and will not make your leg muscles so sore. Walk a while, then sprint easily. Do just enough to limber up your muscles and make you feel good—not over a couple of miles of alternate walking and running. This will gradually strengthen your muscles and tendons and fit them for the strain of quick starts.

**The Track.**—Always limber up first, not on the track, but on the oval with quick dashes, interspersed with 50 to 75 yards of easy long striding, with every now and then some high knee-raising to limber muscles of the thigh and hips. Walk around between runs, or even sit down a little if the day is warm, but never sit on the grass. By doing so, you are likely to get neuralgic or rheumatic pains. Take plenty of time in this limbering up. Boys seldom take enough time to limber up. An experienced sprinter will give half an hour to limbering up before he gets on his marks.

Be careful with your “starts.” Many races are won by the start. Two-fifths of a second may be cut from the time of a hundred yard runner by learning how to start and how to run.

**Dig Your Marks.**—Make a mark six inches back of the starting line. Bring the toe of front foot to this mark. Kneel, with your back knee opposite the joint of the great toe of your front foot. Put your fingers on the starting

line, shoulder width apart, and push up to what you think is starting position. (See illustration.)

Have some one stand to one side and tell you whether:



ILLUSTRATION 1. ON THE MARKS

The athlete in the second lane has almost perfect form

Your shoulders are beyond the starting line, as they must be.

The angles between calf and thigh are nearly right angles.

The back knee is four to six inches from the ground.

Your back is straight and head up.

Your weight is about three-fifths on the ball of the front foot and two-fifths on your fingers.

Be certain to get the first, second and last of these points and the others will likely follow if these are right. If you do not get these points from the marks you have taken, move the back knee and foot forward or backward an inch or two and try again. Every boy has his own position for the back knee, depending upon the length of his legs. Some need to bring it up to within an

inch of the front mark while others need it opposite the arch of the foot.

Do not spread your hands wide apart on the starting line. This brings the shoulders down and hips up, weakening your drive. Do not let your knees turn out. They must be exactly at right angles to the starting line or you lose power.

Do not put the rear foot directly behind the front. It should be two or three inches to the side of a line drawn from the inside of the front foot.

Boys with long legs and arms must make their mark 7 to 9 inches back of the line, instead of 6 inches. Boys with very short arms and legs often find 4 inches the best.

Having discovered where your marks should be, scratch holes parallel to the starting line. Then face the line, set your spikes in the holes and round them out to fit your foot, the rear walls slanting back at an angle of 45 degrees. Dig deep enough to give a good grip for four spikes.

**To Get Set.**—Use your rear foot to help push up to “set” position and keep a firm pressure on it until the gun fires. This is important, and if you fail to do it your foot hangs loosely in the mark, and you will have to thrust it back before you can leap from it when the gun fires, thus losing a fraction of a second.

Do not snap up to set position or you may overbalance.

Do not loaf up or you may get caught by a quick starter.

Come up steadily and once you get to position hold it, every faculty centered on the report of the gun. Let nothing distract your attention. Concentrate on getting off with the greatest possible speed at the shot.

In coming to starting position push upward and forward. If you simply push upward, your shoulders will not be beyond the line nor your weight right for a quick start. If you simply push forward, you lose the powerful leg drive.

**To Get Off.**—Do not leap mainly from the front foot. That will throw you up, instead of forward. If you leap mainly with the rear foot it will throw you too low. Leap from both feet.

Do not try to leap too far nor too short. Leap quickly, your natural distance, and get your second stride in like a flash. The second stride is the great help at this stage of the game. Observe boys who do not understand it and see how they hang on their first leap. If your second stride comes in like a flash your third, fourth, and so on will follow quickly.

Do not try to come up into running position all at once, or it will slow you up. Come up gradually and hit your running position in eight or ten strides. Run smoothly, not heavily, and run forward, not up and down.

## CHAPTER IV

### THE HUNDRED YARD DASH

You should have six weeks to get into shape for your first race, training six days a week. Follow a schedule approximating the one below. Cut it down any day on which you do not feel fit. Undertrain rather than overtrain.

#### *First Week—*

Monday, Wednesday, Friday—Limber up—then take 100 to 150 yards at  $\frac{3}{4}$  speed

Tuesday, Thursday, Saturday—Six to eight 20-yard starts at good speed; rest; then 40 to 50 yards at  $\frac{4}{5}$  speed

#### *Second Week—*

Monday, Wednesday, Friday—As before

Tuesday, Thursday, Saturday—Six to eight starts; rest;  
50 to 75 yards at  $\frac{4}{5}$  speed

*Third Week—*

Monday and Thursday—100 to 150 yards at  $\frac{4}{5}$  speed  
Other days—Six to eight starts; 60 to 75 yards at full speed

*Fourth Week—*

Monday—100 yards at  $\frac{4}{5}$  speed  
Tuesday and Wednesday—Six to eight starts of 30 yards;  
50 yards at full speed; 150 yards at  $\frac{4}{5}$  speed  
Thursday—Two starts. Time trial for 80 yards  
Friday—150 yards at  $\frac{4}{5}$  speed  
Saturday—Two starts. Time trial for 100 yards

*Fifth Week—*

Monday—150 yards at  $\frac{4}{5}$  speed  
Tuesday and Wednesday—Six to eight starts; 75 yards at full speed  
Thursday—Three or four starts. Time trial 80 yards  
Friday—Three or four starts; 150 yards at  $\frac{4}{5}$  speed  
Saturday—Three or four starts. Time trial for 100 yards

*Sixth Week—*

Monday to Thursday—As the week before, running 75 yards at  $\frac{4}{5}$  speed on Thursday instead of the 80-yard time trial  
Friday—Rest  
Saturday—Race

While limbering up, and on the days in which you run 100 to 150 yards at three-quarter speed, learn to set your feet straight, turning the toes neither out nor in. Learn to run forward, not up and down, and close to the ground instead of undulating in a series of springs. Learn to hold your chin in and to use your arms. You will get a good deal of help from your arms if you handle them properly. Thrust them forward and upward half bent as you stride, opposite arm and leg moving in unison, the clenched fist swinging slightly across your body with arms tense, as though giving an uppercut in boxing. Be sure to slow down gradually at the end of your starts.

Never stop short. If your start is 20 yards take 30 or 40 more to slow down. Do not try to stride too long—that will slow up your speed. Do not chop your stride—that only wastes energy. Run with your natural stride.

Once the racing season has begun, train according to the schedule for the sixth week. Lay off occasionally on Tuesday or Wednesday, to conserve your energy.



ILLUSTRATION 2. THE 100 YARD DASH

The runner to the right has excellent form in the carriage of body, legs and chin

**Running the Hundred Yards.**—Get off like a flash and run as hard as you can. This race is a dash from start to finish, and you must not look around to see the other runners. In looking around you slow up a little even though it does not seem so, and before you can pick up again your rival has passed you. The only time you may permit yourself to look around is when you know that you are faster than any competitor and want to save your

strength for another race, or when first and second qualify and you are sure you can be second.

If there are no alleys, fix your eye on some point straight ahead and run to it. Runners who fail to do this often run across the track, at the risk of being disqualified.

Do not think of your arms or legs. Have only one thought and let it be how to reach the tape first. The proper use of your arms and legs must be acquired while you are training and it will then come about naturally in a race.

## CHAPTER V

### THE 220, 440 AND DISTANCE RUNS

**The 220 Dash.**—This race requires a different stride. In training try to learn to lengthen your stride, to swing along. Acquire this swing while doing stay-up work of 200 and 300 yards at four-fifths speed as called for by the schedule. Do not think of this swing in practising starts for they must be practically the same as in the one hundred yard dash. Sometimes in doing your stay-up work use the fast crouching start and merge into the swing when 30 to 40 yards from your marks. At other times swing along for two hundred yards and merge into a full speed sprint 50 yards from the finish. In this way you will acquire a combination stride that will get you off the marks with speed, ease you through 120 yards without any noticeable change and then break into the final dash for the tape. It may take two weeks to acquire this stride but once you get it you will be delighted to see how much easier it makes the race. You will become able to swing through 175 yards at almost 100 yard

speed and finish the last 50 yards at an even faster rate. Practice starts on the turn, starting about 30 yards back of the curve and run on the balls of the feet as you swing around the turn, just as you do on the straightaway. Setting the outside foot at a slight angle towards the curb will help in this.

For a schedule follow in a general way the same plan as in training for the one hundred yards but make the starts 40 to 60 yards. Increase the sprinting distances by half and double the distance given for stay-up work. Once or twice each week get a sprinter to race you for the final 50 yards.

After the racing season starts, rest sometimes for two days before the race. If you train at all on Thursday make the work very light. Less work is required to stay in condition than to get into condition. A runner must be careful not to lose his edge. He must not overtrain.

**Running the 220.**—Get off at your best speed, exactly as if it were a 100 yard dash. After 60 yards or so glide into the swing stride. Ease down into it without appreciably letting up in your speed. This action is hard to describe in words but try to follow the plan and you will get it. Then finish the last 50 yards or so with all your strength.

**The 100 and 220.**—Many sprinters run both these races. The training schedule for the 220 will train for the 100 also except that you should practice some of the starts on the straightaway and some on the turn, so as to know where you are in either race.

**The Quarter Mile.**—This is generally conceded to be the hardest race. With intercollegiate record holders it is a sprint from start to finish. It is useless for a boy to attempt it unless he is strong as well as fast and he should have at least six weeks to get in shape for his first race. In addition he ought to have two or three weeks of preliminary training over the fields or country roads. A quarter mile race takes much out of a boy and

he will not recover from a hard race for three or four days. If he goes into a contest poorly trained it will take him longer to recuperate and his speed and stamina may suffer throughout the season.

If you decide to run the quarter start early in the spring, as soon as you can get on the roads. If in a big city, where your training must be in the gymnasium, start in February.

You will have to go cautiously on a gymnasium track or sore legs will result. Any type of indoor track is hard on the legs and you cannot do as much running as over the fields or on the road.

In the preliminary training, alternate walking and running, the latter merely a jog at first. Train three days a week and go easy at the start, gradually increasing the length and slightly increasing the speed of your runs as your muscles become accustomed to it. Do not try for speed in these preliminary weeks, the object is merely to get legs and lungs in condition to do that when you go on the track.

Your legs will get sore even with care but if not overdone it will gradually wear away. If it does not disappear you are forcing the pace, giving your legs more work than they can stand, and there is nothing you can do but rest until they get better. Rubbing and massage after each day's training will help to take out the soreness. Do this after a shower, giving special attention to the calves and the shin. Rub, knead and roll the calf muscles, not too vigorously and not over ten minutes at a time.

Many quarter milers chop their stride. They could get four inches more in every stride just as easily by more knee and ankle action, by reaching out with the foreleg instead of letting it hang stiffly from the knee. Watch a champion 440 runner and you will see how it is done. It will tire your ankles and make your shins sore at first but it is worth persistence. If a runner adds but two

inches to each stride it means 5 yards in a 440 race, gained with no extra effort once he has acquired free knee action. Not only that, but this stride reduces the jar as the foot strikes the ground, and that saves vitality. Little things count in a hard race and this is one of them.

Practice starts with the 220 men. Give much attention to this practice. (See "How to Start.") Do not take all starts on the inside lane. Take some wide starts and learn the angle at which you can safely cut in to the pole ahead of slower starters.

Instead of running alone in fast work get a couple of sprinters once or twice a week to race you the distance called for by your schedule.

Vary the following schedule according to your condition. Cut it down if it is too much. Watch for any stiffening of your muscles in fast work, for that indicates that you are forcing your development. If you begin to feel soreness stop speeding and go slowly the next day. Be cautious about doing more than the schedule requires. Few boys can stand more, and you must not overtrain. Limber up well before any fast work.

*First Week—*

Monday—Two starts, 40 yards on the turn; an easy 660

Tuesday—Four starts; a fair 100

Wednesday—An easy 880

Thursday—Two starts; a fair 300

Friday—Jog a 660

Saturday—660 at  $\frac{3}{4}$  speed

*Second Week—*

Monday—An easy 880

Tuesday—Four starts; a fair 150

Wednesday—Four starts; a fast 50; 440 at  $\frac{3}{4}$  speed

Thursday—A fast 220

Friday—Jog a 660

Saturday—A fair 660, sprinting the last 220

*Third Week—*

Monday—A medium 660

Tuesday—Three starts; race 220

Wednesday—An easy 880

Thursday—Two starts; race 250

Friday—An easy 220, continue into a 440 at  $\frac{1}{2}$  speed

Saturday—Two starts; race 300

*Fourth Week—*

Monday—440 yards in 65 seconds; an easy 440

Tuesday—Four starts; 300 yards, racing the last 220

Wednesday—660 at  $\frac{1}{2}$  speed, sprinting the last 100

Thursday—Race a 300

Friday—An easy 440

Saturday—Time trial

*Fifth Week—*

Monday—Limber up only

Tuesday—Two starts; race 300

Wednesday—An easy 660, sprinting the last 100

Thursday—Race 350

Friday—An easy 440

Saturday—A 440, the last 300 fast

*Sixth Week—*

Monday—Two starts; an easy 440

Tuesday—Two starts; easy 660, the last 200 strong

Wednesday—440 (100 fast, 200 easy, 140 fast)

Thursday—Limber up only

Friday—Rest

Saturday—Race

**Running the 440.**—Get off fast, as though you were running a 220. If you are on the pole side you may be sure the outside men will try to pass you. Do not allow them to do so, at least not unless the pace is much faster than you have been in the habit of running. If you draw an outside position a fast start is doubly important for without it you are likely to be boxed in or forced to run wide. Cut across, bearing in mind that you must be two strides ahead, and try to be among the first three or four as you come to the turn, then fall in behind next to the pole. There is no particular advantage in leading. Second, third or even fourth place is just as good, and better in some respects, for the leader breaks the wind for you

and you are not so likely to overrun yourself the first two hundred yards.

A point of the utmost importance is, know how fast you can run without breaking and do not run any faster until you near the finish, no matter how far ahead the leader may be. Inexperienced runners often run for all they are worth for 300 yards or more, only to fall down at the finish. Such runners may be in your race and if you allow them to draw you out beyond your pace in the first part of the race you too will weaken. On the other hand, runners who can run at a fairly good rate for 350 yards and still have a strong sprint left, may try to slow up the pace in order to save their sprint for the finish. If the pace is too slow for you take the lead or force the leader to speed up. Some boys run the quarter mile with an even stride throughout. Such boys cannot afford to let a sprinter slow up the pace for them. A runner of this type is likely to come along strong with his steady stride about the middle of the backstretch, where the sprinters slow up if they can, and if he lets them set the pace the race is lost. They will run away from him at the finish. If he strides right along and forces them to speed up the extra effort may spoil their sprint and bring him in a winner.

Run the race according to your style. If you are a sprinter, the slower the pace for the middle 200 yards the better your chances. If you are a steady runner strike your stride and maintain it throughout.

Generally speaking, the 440 starts with a dash, steadies down on the turn, with the real fight beginning about the middle of the backstretch, and the race finished on nerve. A college athlete runs the first three-quarters at top speed and finishes on what is left.

Try to maneuver so that you do not have to run outside on the turns. Every yard you are out from the pole adds three yards to your race. If you are the sprinter type try to get second or third place on the start and save

your strength as much as you can until the time comes to sprint. You should know how far you can hold your sprint after having gone 300 yards. Start it that distance from the finish, or further, and if possible pass your opponent on the stretch and stay with him until he quits. Once you start to pass him you must carry it through. The runner who challenges on the back-stretch, fails to pass, and drops in behind on the turn, can seldom pass on the final straightaway. That is all right in longer races but it seldom succeeds in the quarter mile.

**Middle and Distance Running.**—Eight or ten weeks are required to get in condition for distance racing. A boy who hopes to become a distance runner should run nearly every week from October to June. The strength of heart, lungs and limb that makes a winner comes slowly, but it comes surely to a boy who persists.

The foundation in wind and muscle should be laid during the autumn and winter. Six weeks on the track in the spring will bring speed and teach pace. Run three times a week during the autumn and winter, beginning easily and increasing speed and distance as wind and legs improve. Do about three miles at first, alternately running and walking (run easily until moderately tired or winded, then walk until you feel ready to run again). Alternate in this way for several weeks, gradually lengthening the runs and shortening the walks. Then start in to run a full mile at half speed. The next time jog two miles. For another practice run a faster 880, jog a little and walk about a mile, and so on. Do your fast work in mild weather, when you can keep your mouth open without risk of inflaming the membranes of the throat. In cold weather wear sleeved jersey and drawers, and go slowly, taking no chance on pulling a tendon. Breathe through the nose.

Speed running or racing makes a very different demand upon wind and muscle than does easy going. This is a fact that some boys find difficult to grasp. Every sea-

son boys who can run on indefinitely at an easy rate, are invariably beaten in a race. In distance-racing, heart, lungs and muscle have to work under forced draught, so to speak, and they must be especially trained. The best way to train for fast running is to run fast. The best way to train for racing is to race varying distances twice each week. Racing, actual competition during training, teaches an athlete much that he would never learn in running by himself against time. He learns how long he can hold his sprint in competition, which is a different thing from holding it when running alone, how fast he can run, the best way to pass and where to pass and also control of the nerve tension incidental to a contest. The latter is a particularly valuable acquisition. Many a boy loses his first race through nervousness by running himself off his feet in the first 300 yards because overexcitement downs his judgment.

Racing as a part of training must not be overdone for it brings on staleness. In racing there is a nervous wear that is absent at other times and it must be avoided. Every distance runner must learn to time his pace, that is, he must know almost to the second how fast he is running. If he does not, he is almost certain to run himself down early in the race. Every mile runner for example should know how fast he can go the first quarter without hurting his time in the 1320 yards still to be run. If he knows this he will run it in his own time even though one or more of his competitors gain 50 yards. He will reason—and probably correctly—that the leader is in the race with the object of leading the inexperienced to run too fast at first and so break before the finish, while a teammate, knowing the plan, will save himself, and come out strong in the last 350 yards.

Then, too, an athlete who knows his pace will not be kept back if the going is too slow. Often a boy with a good 300 yards sprint will jump to the lead at the start and once he has the lead will loaf along to save himself

for the finish, knowing that his speed will beat stronger runners in the final dash if he can lure them into going easy through most of the race. An athlete who knows his pace will discover this quickly and hurry the race in order to spoil the sprinter's finish before he has a chance to use it.

Always pass a runner on the straightaway if possible, for you run three yards farther than he does if you are outside of him on the turn. When you pass him do so on the jump, before he knows what you are about. Swing out and around him at high speed and take the lead. If you come along gradually he will hurry the pace and may hold you back to the turn, putting you at a disadvantage. The best place to pass depends upon your condition, upon how long you can hold your sprint, and upon how many men are ahead of you. With many in the race it is well to get into fourth or fifth place if behind, as soon as you can without using up any of your endurance, perhaps on the backstretch of the first lap, then drop in behind on the following turn, pass to second or third place on the straightaway and start your final sprint 300 or 350 yards from the finish if you can hold it as far as that.

It pays to run the final sprint even if you have to continue it around the curve, for if your opponent can hold you the length of the backstretch the chances are that he will hold you in the final straightaway if you drop in behind on the turn. Once you have challenged it becomes a question not only of speed, but of endurance and determination. Of two boys equal in strength and speed the one who has the stronger determination will win.

Do not commit the error of using too much speed the first lap. An athlete who can run a mile in 4.50 if he runs the first quarter in 70, breaks when, in the excitement of a race, he takes the quarter in 65.

After five weeks on the track a runner should know

how fast he can run the quarter and still be strong. Knowing it he should let nothing tempt him to exceed that pace. It is an axiom on the race track that a horse which overruns itself the first lap cannot finish strong



ILLUSTRATION 3. DISTANCE RUNNING

Note the body position and the angle at which the arms are carried.  
The rear man has good form

and the same is true with athletes. There is a physiological reason which covers both cases.

As a rule the second lap of a mile run is the slowest, and the third is but little faster. A good rate for time between 4.45 and 4.50, which is good High School time, is 69, 76, 73, and the last quarter 68 or less. In the Western Conference Meet in 1913 a 4.34 mile was run in

62, 73, 70, 69, but the first quarter was too fast. Jones, of Cornell, in making his record run of  $4.14\frac{2}{5}$  covered the mile in  $61\frac{4}{5}$ ,  $67\frac{3}{5}$ ,  $66\frac{4}{5}$ ,  $58\frac{1}{5}$ .

In the Conference above referred to the runner over-ran himself the first quarter and had no finish left.

In the 880 a runner must run the first quarter close to 60 if he expects to finish under 2.08, which is good time. In this race the first lap is always the fastest. Time of 2.03 would be run in about 57 and 66. It has been run in 55 and 68 but there again the first quarter was too fast.

Osborn ran  $1.58\frac{2}{5}$  in 55 and  $63\frac{2}{5}$ , which was good judgment. Take 61, 69 if you aim at 2.10 and you will be about right. The 2.05 rate is 59 and 66.

**The Final Sprint.**—During the course of training every middle and distance runner should learn how far he can hold his final sprint. He can discover this by gradually increasing every few days the distance he sprints to the finish. Unless he knows how far he can hold his sprint he is likely to start it too soon and break before the finish, or start it too late and cross the finish line a loser, with unused strength in reserve. You must learn to run yourself out if you expect to win against strong competition.

**Sore Legs.**—Expect sore legs when you start training. Under "How to Train for the Quarter Mile" you will find instructions for treating them. Do not use spiked shoes day after day when you begin on the track for they will make your legs very sore. Use spikes one day, soft soled shoes the next, and so on. After two weeks you should be able to run entirely in spikes.

**Cold Days.**—On raw, cold days do no fast work if you can help it. The muscles do not have the elasticity they have on warm days and tendons become more rigid. These are the days on which there is danger of pulling a tendon, days on which hard work is followed by unusual soreness and stiffness. On such days a runner must have his arms and legs covered. Trainers must not permit anything else. Runners will take chances rather

than wear drawers, and then wonder why their legs keep stiff and sore and why they have shin splints.

**Body Position.**—In distance running the body should incline slightly forward, about 15 degrees. A boy who runs with his body straight up is running against himself.

**The Arms.**—The arms are not used as vigorously in distance running as in the sprints—except at the finish, where the athlete pulls on them just as he does in the dash. Experienced distance runners usually carry the arms about one-third bent, their natural position, swinging freely and easily in rhythm with the legs. Beginners bend the forearm too closely on the upper arm, hold the arms stiffly, or move them back and forth like the piston rod of an engine. This does not help in running and it uses up strength. Sprints are run with the arms as well as the legs. Distances are run with the legs, all the arms do is not to interfere, but they are useful at the finish, as noted above.

**Breathing.**—In walking form the habit of breathing through the nose because, in the first place, you breathe more deeply in that way and thus develop the lungs. Second, because the fine hairs in the nostrils catch dust particles floating in the air which in mouth breathing are drawn directly into the bronchial tubes. Third, because on raw, cold days mouth breathing is likely to bring on a sore throat. In racing, however, you must breathe any way you can through both mouth and nose. Inexperienced runners race down the track, teeth clenched, faces strained with effort, in the impossible task of getting enough air through the nose alone.

**Training Schedules.**—Training schedules for the 880 and the mile follow. While no two boys need exactly the same training, these schedules have been found to fit the average High School boy. They may be varied to suit the strength of different athletes, but few are strong enough to do more than the schedule requires.

**Do Not Overtrain.**—Most High School runners train too hard. They think they must run themselves completely out every day, but that is a mistake. Some strength should always be kept in reserve.

**Training Schedule for 880 Yards.**—Limber up first. Starts mean 40 yards around the turn. Take a preliminary two weeks, as outlined on previous pages, then on the track, as follows:

*First Week—*

Monday—An easy 660 yards

Tuesday— $\frac{3}{4}$  mile at  $\frac{3}{4}$  speed

Wednesday—220 at  $\frac{4}{5}$  speed; an easy half mile

Thursday—A fair 440

Friday—880 yards at half speed

Saturday—Two starts; a 220 easy, continuing into a fast 220

*Second Week—*

Monday—A slow 440, continuing into a fast 220

Tuesday—Two starts; 300 fast; 440 easy

Wednesday—A slow mile

Thursday—Fast 330; jog a 440

Friday—A medium 880

Saturday—Two starts; 440 in 61

*Third Week—*

Monday—Slow  $\frac{3}{4}$  mile

Tuesday—600 yards (440 in 62, and race the last 160)

Wednesday—Jog an 880

Thursday—660 at  $\frac{3}{4}$  speed

Friday—Fast 300

Saturday—660 yards (440 in 62, and race the last 220)

*Fourth Week—*

Monday—Jog a mile

Tuesday—Two starts; 660 (440 in 60, and race the last 220)

Wednesday—220 in 28; an easy 660

Thursday—Two starts; 660 (440 in 60, and 160 at your best)

Friday—Easy  $\frac{3}{4}$  mile

Saturday—660 (440 in 60, and race last 220)

*Fifth Week—*Monday—Easy  $\frac{3}{4}$  mile

Tuesday—880 (easy 220, fast 220, easy 220, race last 220)

Wednesday—660 yards at  $\frac{4}{5}$  speed

Thursday—Same as Tuesday

Friday—Rest

Saturday—Time trial

*Sixth Week—*

Monday—Medium 660 yards

Tuesday—Two starts; 440 in 60; jog 440

Wednesday—An easy 660

Thursday—440 at half speed and continue into fast 300

Friday—Rest

Saturday—Race

**Training Schedule for the Mile.**—Limber up first. Starts mean 60 yards around the turn. Take a preliminary two or three weeks as outlined on previous pages, then on the track, as follows:

*First Week—*Monday—Slow  $\frac{3}{4}$  mileTuesday—Mile and a half at  $\frac{3}{4}$  speed

Wednesday—Easy 440; jog 880

Thursday—A fair 660

Friday—Mile at  $\frac{1}{2}$  speedSaturday—Two starts; fast 300; 440 at  $\frac{4}{5}$  speed*Second Week—*

Monday—Slow mile, ending with a 220 fast

Tuesday—Two starts; 440 in 70; rest; 440 in 75

Wednesday—Slow two mile

Thursday—440 in 65; jog 880

Friday—Medium mile

Saturday—Two starts; 660 in 1.45 (69, 36)

*Third Week—*

Monday—Slow mile and a half

Tuesday—Two starts; 440 in 65

Wednesday—880 (1st 440 in 69, race last 440)

Thursday—Jog a little

Friday—Medium  $\frac{3}{4}$  mile

Saturday—880 (1st 440 in 68, race last 440)

*Fourth Week—*

Monday—Jog two miles

Tuesday—Two starts;  $\frac{3}{4}$  mile about 3.38 (69, 76, race last 440)

Wednesday—440 in 65; slow  $\frac{3}{4}$  mile

Thursday—Two starts; 880 in 2.23 (68, 75), continue into a 220 at best speed

Friday—Slow mile and a half

Saturday— $\frac{3}{4}$  mile in about 3.37 (68, easy 220, race last 660)

*Fifth Week—*

Monday—Easy mile

Tuesday—Mile (easy 440, 440 in 66, jog 440, 440 in 67)

Wednesday—880 (220 easy and race last 660)

Thursday—Same as Tuesday

Friday—Rest

Saturday—Time trial

*Sixth Week—*

Monday—Medium 880

Tuesday—Two fast 440s; jog a little

Wednesday—Easy mile and a half

Thursday and Friday—Rest

Saturday—Race

## CHAPTER VI

### THE HIGH HURDLES

There are 10 hurdles, each 10 yards apart. The first hurdle is 15 yards from the start, the last hurdle 15 yards from the finish. Each is 3 feet 6 inches high.

While champion hurdlers are usually tall, small men can run the hurdles in very good time. Do not hesitate

to try the hurdles if you want to regardless of your size. The main thing is to have speed, a good spring, and not be afraid of a fall now and then.

The first thing to learn is how to go over the hurdle, i.e., how to approach, how to throw the front leg, how to handle the back leg, what to do with the arms, and what the body position should be.

Set up a hurdle 15 yards away, get on your marks and start for it. Take off from the ball of your foot, and as you leave the ground throw the front leg forward and upward, straight at the hurdle, turning the toe in at an angle the first few times until you learn it and aim to barely clear the hurdle with the heel. At the same time reach forward with the opposite arm and pull on it. Bring the back leg up, out to the side, calf bent back on the thigh, the calf, thigh and foot almost on the same plane. Do not be in a hurry to get this leg over the hurdle. Drag it over, but bring it under you and whip it quickly forward as the front foot strikes the ground. Do not let the toe hang down as it will catch on the hurdle and throw you—turn it out to the side.

Your jumping foot should take off 6 feet or 6 feet 6 inches from the hurdle. If you have trouble in hitting this spot and your take-off is too close or too far, or if when half way to the hurdle you feel that you are not going to clear it and therefore hesitate an instant to regulate your stride, either shorten or lengthen the strides from the starting line, or try starting from the other foot. With a little practice one of these methods will bring you to the take-off.

Face squarely to the hurdle as you approach and do not take off from the heel. That spoils your spring and retards you. Your heel will touch the ground as you spring—you cannot prevent that—but you can prevent it from striking before the ball of the foot strikes.

After you are able to clear the hurdle fairly well begin little by little to bend the body forward as you sail over,

almost as though you wanted to touch your chest with your knee. This diminishes wind resistance and adds power to your drive. Get this bend a little at a time because if you bend too low at first you will be thrown.

The next thing to learn is to bring the front foot down as quickly as you can and to land on the ball of the foot.



ILLUSTRATION 4. HIGH HURDLES

Balancing with the arms

Speed is made while you are running, not when sailing through the air.

Once you learn the game, go hard at the first hurdle. This is one of the main points in hurdling. It helps you to skim the hurdle closer and lands you further beyond it, shortening the distance to the next hurdle, and every inch counts, because the distance must be made in three strides and beginners invariably have difficulty in doing

this. To acquire ability to make the ten flights each in three strides practice exercises that stretch the muscles of the thighs. Raising the knees until the under muscles of the thigh stretch, and long, free striding will help. Go at these exercises gradually. Also, three or four times



ILLUSTRATION 5. HIGH HURDLES

Thompson, World's Champion, pulling with his arms

a week, walk up alongside of the hurdle and stride the back leg over it in exactly the position you would use in making the flight over the hurdle, that is, out to the side, knee, thigh and toe on the same plane. Begin this practice with the low hurdle first. It is an invaluable aid in gaining correct form.

In running the hurdles make the second of the three strides a long one.

Runners disagree in regard to the arm movement. Some throw the arms to the side to balance, others reach forward with the front arm as they leave the ground, pull on it and bring it half way back, tense, bent at the elbow, as they are about to alight. This is a later development in the game and is strongly championed by many of the best hurdlers. Both styles are helpful when properly employed.

When you have learned to clear one hurdle in good form put up another, and if you get your stride right, and clear it, add others as called for by the schedule which follows. Do not hurdle oftener than three days a week or it will make your legs too sore and will hurt your speed. Work with the sprinters on alternate days, or at least on two of them and rest one day.

On cold days do no hurdling. It will make your legs very sore and you run the risk of pulling a tendon. Work with the sprinters instead, and be sure to wear drawers.

Observe these special points:

Take off from the ball of the foot.

Go hard at the first hurdle.

Get the front foot down quickly.

Whip the back leg forward the instant the front foot touches the ground but do not jerk it hurriedly over the hurdle.

**Training Schedule for High Hurdles.**—Limber up well before doing any fast work. Train with the sprinters on Mondays and Wednesdays.

*First Week—*

Monday—Three 20 yard starts; fast 50; rest; swing through 150 at  $\frac{1}{2}$  speed

Tuesday—Six or eight times over one hurdle

Wednesday—Five or six 20 yard starts; swing through 150 at  $\frac{3}{4}$  speed

Thursday—Five or six times over two hurdles; fast 75

Saturday—Four or five times over three hurdles; rest; swing through 150

*Second Week—*

Monday—The same as previous Monday

Tuesday—Five or six times over three hurdles

Wednesday—Three or four starts; rest; 150 at  $\frac{3}{4}$  speed

Thursday—Four or five times over three hurdles; race  
75 yards with sprinters

Saturday—The same as previous Saturday

*Third Week—*

Monday—Three or four starts; 100 at  $\frac{4}{5}$  speed

Tuesday—Once over five hurdles; twice over four  
hurdles; twice over three hurdles

Wednesday—Three or four starts; 150 yards at  $\frac{4}{5}$  speed

Thursday—Four times over five hurdles

Saturday—Four or five times over 5 hurdles

*Fourth Week—*

Monday—Three or four starts; 150 yards at  $\frac{4}{5}$  speed

Tuesday—Four times over five hurdles

Wednesday—Three or four starts; 150 at  $\frac{4}{5}$  speed

Thursday—The same as Tuesday

Saturday—Once over six hurdles; three or four times  
over five hurdles

*Fifth Week—*

Monday—Five or six starts; 150 yards at  $\frac{3}{4}$  speed

Tuesday—Twice over six hurdles

Wednesday—Five or six starts; 150 yards easy

Thursday—Once over eight hurdles; race 100 yards with  
sprinters

Saturday—Time trial over 10 hurdles

*Sixth Week—*

Monday—Three or four starts; 150 yards at  $\frac{4}{5}$  speed

Tuesday—Once over six hurdles; easy 150

Wednesday—Five or six starts; race 75

Thursday—Once over eight hurdles; easy 150

Saturday—Race

When you have had six weeks' training go over the hurdles less in practice. Train mainly with the sprinters for speed and strength. You should have form by that time, so go over three hurdles three or four times, about twice a week, and on Wednesday take the full flight.

## CHAPTER VII

### THE LOW HURDLES

The low hurdles offer a different proposition to the high ones. The runner does not jump them, he only strides over them. There are 10 hurdles 2 feet 6 inches high and they are 20 yards apart, with the first and last 20 yards from start and finish respectively. The distance between the hurdles must be covered in seven strides to make good time so a tall boy has some advantage. A short runner must take nine strides and even tall boys have trouble at first in making the distance in seven strides. They get along all right for five or six hurdles but have to take nine strides between the others.

There is a way to overcome this difficulty, namely, take two extra very short lightning-like strides midway between the sixth and seventh hurdles, nine strides between these two hurdles and nowhere else, with two of them as short as a runner can make them. The difficulty arises from the loss of an inch or two on each hurdle, and at the sixth or seventh this loss has aggregated 2 feet or more, leaving approximately 49 feet to make in the next seven strides and the runner cannot do it. The plan described above takes up the lost ground and brings the runner close enough to the next hurdle to clear it and to run the balance in seven strides.

Any boy who makes good time in the low hurdles must not only cover the distance between the hurdles in seven strides but must also learn to go over the hurdles evenly, in a long, smooth stride. The stride over the hurdles is usually between 12 and 13 feet and theoretically the athlete's head should rise no higher in making it than it

does in making the strides between the hurdles. But it is rare that a hurdler attains such proficiency.

The body bend is very slight and the back toe need not be turned out. The runner faces squarely to the hurdle as he approaches, and takes off and alights on the ball of the foot as in the high hurdles. He must go fast at the hurdles and if he hesitates he loses.

Any boy above medium height can learn to run the low hurdles in seven strides. Practice and the stretching exercises described in the chapter on the high hurdles will teach him to do it. Have a sprinter run with you to draw you out. Get him to force you to run strong. Go hard at the first hurdle and lope along between the others, taking long strides or bounds. You will think you are going slowly but you will really be covering the ground much faster than you think and doing it with less exertion than in nine strides. Use two hurdles at first, then three, then four. You will soon get four or five hurdles in seven strides each and be going fast, then finish the flight with nine strides between hurdles or use the short step between the fifth and sixth and seven strides on the remainder. In a few weeks you will be able to use seven strides throughout.

Occasionally, but very rarely, a runner who handles himself well learns to use either leg in clearing the hurdle and covers the distance between them in eight strides. When a boy can do this and do it smoothly there is no reason for trying to lengthen his stride so that he may always use the same leg in clearing the hurdle.

Low hurdlers have trouble at first in striking the take-off. It should be  $6\frac{1}{2}$  feet from the hurdle and for a fast runner is usually ten strides from the start. These strides vary with different athletes. A famous college hurdler made them as follows (in feet): 4, 4, 5, 5, 6, 5, 6, 6, 6, 6, and his take-off was 7 feet from the hurdle. This man got "set" with his right foot forward, and took off from the same foot. One whose stride averages 5 inches less

should get set with his left foot forward if he wants to take off from the right foot and then cover the distance in 11 strides.

Some hurdlers who run both high and low hurdles start with a different foot for each. If they get set with right foot forward in the high hurdles they set with the left forward in the low. This gives them a uniform stride in their approach to each and the take-off is from the same foot.

**Training Schedule for Low Hurdles.**—Limber up first. Run with sprinters on Mondays and Wednesdays.

*First Week—*

Monday—Three 20-yard starts; a fast 50; swing through 200 easy

Tuesday—Six times over one hurdle; twice over two hurdles

Wednesday—Three starts; a 220 at  $\frac{3}{4}$  speed

Thursday—Four times over three hurdles

Friday—Rest

Saturday—Four times over three hurdles; a fair 200

*Second Week—*

Monday—Three starts; fast 60; a fair 250

Tuesday—Four times over three hurdles

Wednesday—Three or four starts; rest; 220 at  $\frac{3}{4}$  speed

Thursday—Three times over four hurdles; race 75 with sprinters

Friday—Rest

Saturday—Same as the Saturday before

*Third Week—*

Monday—Three starts; 300 at  $\frac{3}{4}$  speed

Tuesday—Once over five hurdles; twice over four hurdles

Wednesday—Three starts; 220 at  $\frac{4}{5}$  speed

Thursday—Three times over five hurdles

Saturday—Three times over five hurdles

*Fourth Week—*

Monday—Starts; 250 at  $\frac{4}{5}$  speed

Tuesday—Three times over five hurdles

Wednesday—Starts; race 220 with sprinters

Thursday—Same as Tuesday

Saturday—Once over six hurdles; twice over five, and practice the short step if you have trouble in getting seven strides

*Fifth Week—*

Monday—Starts; race 150 with sprinters

Tuesday—Twice over six hurdles, practice the short step if needed

Wednesday—Starts; swing through 300

Thursday—Once over eight hurdles; rest; race 200 with sprinters

Saturday—Time trial over 10 hurdles

*Sixth Week—*

Monday—Starts; 250 at  $\frac{3}{4}$  speed

Tuesday—Once over six hurdles; easy 300

Wednesday—Starts; race 150 with sprinters

Thursday—Once over eight hurdles; easy 250

Saturday—Race

Practice starts on the turn, so as to become accustomed to swinging around it in taking the hurdles.

**How to Train for Both Hurdles.**—If you try both High and Low Hurdles you can hardly avoid training with them four days each week. Train most over the ones which you find most difficult.

The following schedule is good provided the High Hurdles are the ones in which you need the most training:

High Hurdles—Monday, Wednesday, Saturday.

Low Hurdles—Wednesday, Friday.

Rest on Tuesday and Thursday.

Vary the drill by working with the sprinters.

Follow this plan until the racing season starts, then go over the hurdles only twice a week, on Tuesdays and Thursdays, twice each, over three or four hurdles, but get good workouts with the sprinters on Monday and Wednesday. Rest Friday and race Saturday.

If strong in the High Hurdles and weak in the Low Hurdles reverse this schedule.

## CHAPTER VIII

### POLE VAULT

**The Pit.**—Dig a pit 10 feet wide and 12 feet long. Fill it with a mixture of sawdust and fine earth, a foot thick, using mainly sawdust, and see to it that this bed is loose and soft before you vault. You cannot be too careful about this, because dropping on the edge of a narrow pit or on hard or lumpy ground may disable you for the season. In the front line of the pit sink a two-inch plank, 12 inches wide and 6 feet long, standing on its long edge, the top flush with the ground or a little above it. Against the middle of this plank dig a hole six inches deep and a foot across, slanting at an angle of about  $35^{\circ}$  to the plank so that the pole will slide in without a jar.

Use a bamboo pole, with a wooden plug in the end instead of a spike. A 14 foot pole is about right to start with. When you can clear 10 feet get a 16 foot pole. A well-balanced 16 foot pole strong enough for a boy weighing 145 pounds or less, measures  $5\frac{1}{4}$  inches around the butt,  $5\frac{1}{2}$  inches 5 feet up, 5 inches 10 feet up, and  $4\frac{1}{4}$  at the top. The plug must have a shoulder, and the pole be wire-wrapped for three inches or it will split with use. The same thing will happen if the plug is removed.

The first thing to learn is to trust yourself to the pole and to swing up, not jump up. To learn this, vault a few times without the crossbar. Grasp the pole about 8 feet high, thumbs up, hands 26 to 30 inches apart, take a run of about 40 feet and swing up. Pull on the pole as you leave the ground, bend at the waist and throw your legs up at an angle of about 45 degrees. Turn your body as it clears the imaginary crossbar, holding to the pole

until it comes up to perpendicular. Then push off from the pole, throw your arms upwards and backwards to jerk your chest clear, and drop on your feet. When you have mastered this and feel safe on the pole, vault over the crossbar, starting at five or six feet.

**The Take-off.**—The take-off is determined by the height at which the pole is grasped, and this in turn depends upon the height of the crossbar. As a rule the upper hand should grasp the pole at, or a little above the crossbar, for heights up to 10 feet 6. Six inches to a foot below the bar for greater heights.

To find his take-off a beginner should grasp the pole at the height of the crossbar, both hands together, and put the butt in the hole standing on tiptoe in the runway, feet together, at a distance from the pit that will bring the hands, arms extended, almost overhead. Your body will then be at an angle of 85 degrees to the ground, and the spot on which you stand will be your take-off. It is important to get the take-off exactly right. If the take-off is too close you will knock the bar off with your toes as you swing up, or you will get a jolt backwards that will spoil your swing and if you take-off too far away you will knock the bar off as you drop.

Vaulters should become accustomed to grasping the pole 10 feet up as soon as possible and then, as the crossbar goes higher, grasp higher and take-off farther away. Getting accustomed to grasping the pole high has the double advantage of enabling the vaulter to avoid changing his take-off and marks every time the bar goes up, and it accustoms him to balancing a long pole in front without interfering with his run.

**Striking the Take-off.**—To be able to strike the take-off every time is of the utmost importance. Once that is acquired you need think no more about your run, but can concentrate on the vault. To make sure of this, measure back 40 feet from the take-off and place a stick or stone as a mark. Then start about 30 feet still farther back

and run, increasing your speed gradually. See that the foot from which you intend to spring strikes the mark as you pass, going at about  $\frac{7}{8}$  speed. Have someone notice whether the same foot strikes the take-off as you vault. If it does, the mark is right. But if your foot strikes between the take-off and the pit your mark is too close. If your foot strikes outside the take-off your mark is too far away and should be moved closer.

It will take much practice to learn this and you must learn to run from the mark to the take-off with a uniform stride or you will not strike the latter regularly. A strong wind against you, or a soft runway, will shorten your stride and you must move the mark closer.

All champions have a mark, and most of them two marks when the bar gets high. The second mark should be six easy strides back of the first. The second mark is used to make sure of striking the first, just as the first is to make sure of striking the take-off. The vaulter starts about 15 feet back of the second mark, running easily and increasing his speed clear up to the take-off.

The distance of the take-off from the pit increases as the bar goes up, but the distance between the take-off and the marks must not change except as modified by a wind or soft track.

**Carrying the Pole.**—Point the pole at an angle of 60 degrees or more as you start. The lower arm should be bent at a right angle, the forearm straight across the body, and the upper arm extended back, not straight, but bent a little, so as to give leverage for the pull up. Run with your chest squarely to the front. Do not wobble the pole from side to side as you will do if you turn your side to the front in running. As you near the pit bring the pole gradually down, and as your foot strikes the take-off reach forward, thrusting the pole into the hole and swing up. The pole strikes in the hole just a fraction of a second after your foot hits the take-off but almost at the same instant and never before. Do not jab the

pole into the hole at a sharp angle. Doing that will give you a jolt and spoil your swing. This is frequently done by men who carry the pole pointed too low and thrust it with arms bent. If you reach out a full arm's length, and bring the butt of the pole down in an arc you will be safe. There will be no abrupt transition between the thrust of

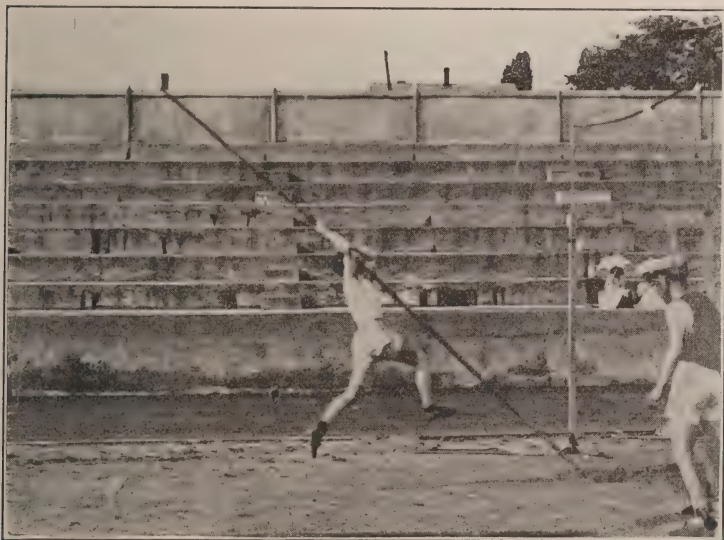


ILLUSTRATION 6. POLE VAULT

Body position as the vaulter leaves the ground

the pole and the swing up and the two will merge smoothly.

Your run should be between 75 and 100 feet, depending upon the height of the crossbar, and the higher the crossbar the more speed you will need. Some vaulters are going at full speed when they reach the take-off while others do better at three-quarters speed, and depend upon a powerful lift. There is a possibility of running so fast that you cannot gather yourself for the vault.

Avoid this and aim to get the highest speed that you can turn smoothly into a vault.

Do not look at the crossbar as you approach. Look where you intend to thrust the pole, and see to it that your vaulting foot is not exactly in line with the pole as it strikes. It should be a little to the right if you take

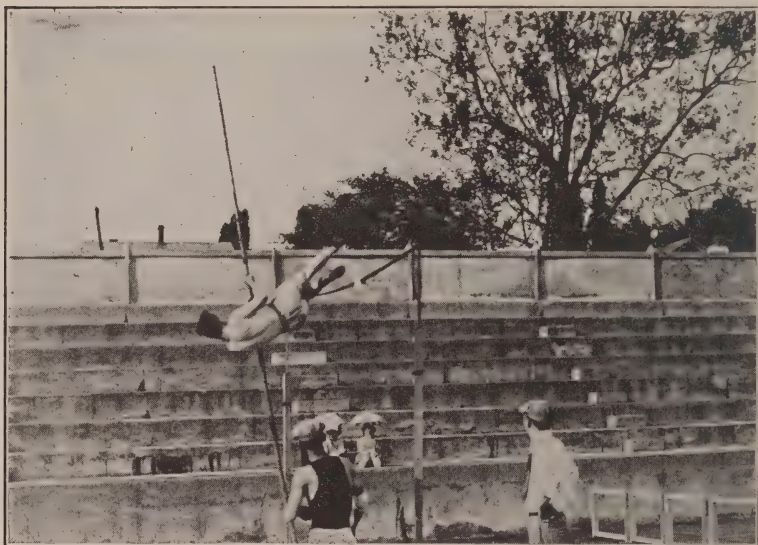


ILLUSTRATION 7. POLE VAULT

Where the body turn begins

off from the left foot, about two inches is enough to allow your leg to clear the pole as you swing up. If it is much to the side, even as much as four inches, it tends to throw your body sidewise across the bar.

**The Swing Up.**—Swing up, pulling the pole in close to your chest, increasing the power of your pull as you rise. At the right moment, which you can find by practice, give a sudden snap of the stomach muscles and throw

your legs up, and at the same time put all the strength you have into a powerful pull, turning your body as it goes over the crossbar.

The pull up must begin promptly as you leave the ground but must not be abrupt or it will stop the pole from rising. Pull equally with both hands. When vaulting without the shift there comes a time when you must



ILLUSTRATION 8. POLE VAULT

Angle at which the legs should be thrown up

push instead of pull with the lower hand, that time being just as the body turn begins.

Do not throw the legs up too soon or it will stop the pole from rising. If you make this throw too late your feet will strike the crossbar.

Throw the legs high, at an angle of 60 degrees or more, and as the bar goes higher, increase the angle. Gold, of Wisconsin, in making the indoor record of 12 feet 8 inches at the Western Conference Meet, Northwestern



ILLUSTRATION 9. POLE VAULT

Body turn completed, vaulter about to release the pole

University, in 1912, stood on his hands on the pole before making the turn.

Do not hurry the body turn, a mistake most beginners make, but the throw of the legs must be quick, and turn deliberate.

**The Shift.**—Most vaulters shift the position of one hand. They slide the lower hand up to within a few

inches of the upper and grip hard a little before the foot from which they vault strikes the ground in the last stride.

A good pole vaulter must use the shift. It will add much to his vault and is not difficult to acquire if attempted little by little. Do not try to acquire it until you have vaulted enough with the hands apart to feel at home on the pole. Then begin by sliding the hand only a few inches at first, increasing the length of the slide as you become proficient. The nearer you can get the lower hand to the upper the higher you will be able to vault.

Do not vault more than four times each week. On the intervening days, early in the season, limber up on the track and practice at the marks.

Do not be in a hurry to get height. Work for form, with the bar four to six inches below your best vault and when you have acquired it, try for height. Try to vault regularly a few inches better than before, but do not try for a new record every time you practice. Once a week is enough to try for a new record and on a day when you are feeling fine.

Do not allow yourself to become discouraged. There is no athletic event in which perseverance brings a more certain reward. A one-time World's Champion began as a small boy, with a stick in the back yard.

In a meet measure your take-off marks and try a few preliminary vaults. Any competitor has the right to move the standards forward or back and judges invariably allow it. See to it that the standards are where you want them when your turn comes to vault.

## CHAPTER IX

### THE RUNNING BROAD JUMP

Broad jumpers should train with the sprinters for two weeks before doing any jumping. Broad jumping strains muscles more quickly than any other event and sudden and violent strains tear muscle fibres unless they have been gradually strengthened by introductory work. An athlete is often stiff and sore for a week after his first jumps.

**The Run.**—The broad jump depends upon a spring to launch the jumper and speed to carry him through the air. A long run and high speed are of the utmost importance. Most boys take too short a run, and do not get up enough speed. A jumper should run at least 100 feet.

**The Mark.**—Place a stone or a stick to one side of the runway, about 70 to 75 feet from the take-off board. Start 25 or 30 feet still farther back and get up speed as you run, so that when you come abreast of the stick you will be going nearly full speed. See to it that your jumping foot strikes opposite the stick as you go by, and keep on at full speed, running right on over the pit. Have some one notice whether your jumping foot hits the take-off board as you pass. If it strikes short, move your stick that much nearer. If you ran over the board, move the stick further away, and keep on trying until you find exactly where the stick should be placed so that when your jumping foot strikes opposite as you pass, it will hit the take-off board squarely at the end of your run. This spot will be your mark.

Practice running from the mark twice a week in order

to maintain a uniform stride. If you do not do this your stride will vary and you will never be sure of hitting the take-off properly. The rules require a take-off board eight inches wide and you should strike it so that your toe comes just short of the far edge. All six spikes get a grip when you hit the board in this way and you get the most out of your spring.



ILLUSTRATION 10. RUNNING BROAD JUMP

The body is doubled, the legs drawn up and the arms extended forward

When you get a mark established, measure it off in your own foot-lengths. Then you will not lose it when you go away to compete and have no tape. Do not try to measure it in strides, because your stride varies and is not to be relied upon. The average High School athlete is too careless about this and often wastes strength finding his mark at a meet.

**The Stride.**—Shorten your final stride, so that your leg is slightly bent and has the feeling of being under you when your foot hits the take-off and you will get a more powerful spring.

There is more to the Broad Jump than merely launching yourself through the air. A good broad jumper will rise three to four feet in the middle of his jump. Train yourself to jump high by stretching a rope or a slender stick across the pit about eight feet from the take-off, 30 inches high at first and learn to clear it in your jump.

**Position of Legs, Arms and Trunk.**—Get into the habit of drawing your legs up under you as you leap, with knees bent. Double your body into a ball and fling both arms forward and upward, and just as you are about to alight, swing the feet forward from the knees and thus gain an extra six or eight inches. Learn this swing little by little, for if you swing the feet too far forward the heel will dig into the ground and you will fall back. Just as your feet strike, hurl your body forward and turn slightly so as to roll on your shoulder.

**Training.**—Train four or five days a week but jump only on two of them. Train with the sprinters on the other days, using starts and short dashes, or practice running to strike the take-off.

Make but three or four jumps and those easy ones the first time you jump. Never jump more than six or eight times at any practice period. Work up gradually to your best condition and you will keep your vim and have very little soreness. On days when you do not jump, run 100 yards at half speed with dashes once or twice a week.

**The Pit.**—The far side of the pit should be not less than 25 feet from your take-off. Bad sprains and occasionally broken bones come from landing near the edge of a short pit and falling over onto the hard ground beyond. Dig your pit a foot deep and fill it with a mixture of sawdust and fine dirt. Never jump unless

the pit is well loosened up. In a meet the loose dirt in the pit should be exactly level with the take-off, never higher, because if it is higher you lose an inch or two in your jump.

## CHAPTER X

### THE RUNNING HIGH JUMP

**Style.**—Twenty-five years ago at an exhibition of the Baltimore Athletic Club in Ford's Opera House, Byrd Page brought a packed house to its feet by jumping cleanly over two horses standing side by side on the stage, and then, for the first time, perhaps, cleared a bar six feet high. It was a great event in athletic circles. He used the straight, right angle jump. He started his run opposite the middle of the crossbar, perhaps 30 feet distant, ran straight at the bar, sprang from his right foot, shot the left leg over at a right angle to the bar, his body turning sidewise with the spring, his right hip and shoulder down. As his jumping leg, bent at a right angle, cleared the bar he kicked it sharply backward, and twisting his right shoulder and hip back alighted facing the bar. This style was popular for several years and is still in use.

Ten years or so later Mike Sweeney discovered a new plan in High Jumping and became World's Champion, with a jump of 6 feet  $5\frac{5}{8}$  inches. Instead of jumping across the bar at a right angle Sweeney started his run opposite one of the standards, turned in towards the bar in his last three strides, and set his jumping foot at an angle of about 45 degrees to the bar. From this position his inside leg went up almost straight, with the toe

pointed at an acute angle to the bar, and his body turned sidewise with the spring, as in the Page jump. As his jumping leg, almost straight, cleared the bar, he whipped it sharply under the other with a scissors-like motion. At the same time he twisted the under hip and inside shoulder back to clear the bar, which he almost faced in alighting. In this jump the body is above the bar for a

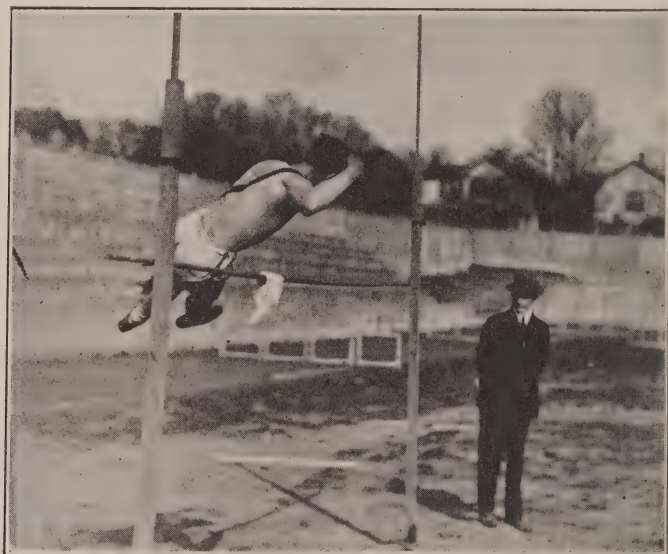


ILLUSTRATION 11. RUNNING HIGH JUMP

Approach from the side

shorter time than in the straight jump and at an angle less likely to displace the bar.

Many modifications of the Sweeney jump have been devised. In the best of them the jumper starts to one side, at an angle of about 45 degrees. In this jump the body is laid back as it crosses the bar, in almost a straight line with the legs, the entire body from foot to shoulder

in a horizontal position. This position is very difficult to acquire and there are many variations of it, in some of which the body is laid back at an angle of 20 degrees, or more. The Sweeney jump, or some one of its modifications, is used by the best modern jumpers.

The swing of the front leg is important. It must be



ILLUSTRATION 12. RUNNING HIGH JUMP  
Straight right angle jump toward the reader

made at exactly the same time as the jump, and must be strong enough to lift the leg high above the bar but not so strong as to weaken the spring. This is a very difficult feat and requires the most exact muscular co-ordination and much practice.

George Horine won the world's championship at 6 feet 7 1/16 inches with a jump called the Western Roll, but it

is not widely used because with it the jumper is likely to make a dive instead of a jump when the bar gets high. It is recommended only to very long-legged athletes whose build handicaps them in acquiring the exact coordination required by the other styles. Six inches have been added to the jump of such a man by using this style and there is no doubt that for jumpers of this type it is the best. With this jump the athlete runs from the side of the bar, at an angle of about 35 degrees, almost as in the old scissors jump, but instead of jumping from the outside foot, he springs from the one inside, and swings the outer leg high up, not over the bar but almost parallel to it. As his body rises he rolls over in the air, turns toward the bar and drops on all fours on the far side. As he springs he throws the inside arm up above the bar and the outside arm is brought around in a wide semicircle as he rolls.

One jump all athletes should avoid is the scissors jump, in which the run at the bar is from the side, with a spring from the outside foot and a swing of the inside leg. You will jump little higher after weeks of practice than you did at first. Almost any one can jump higher with it at first than with the Sweeney jump or any of its modifications, because the latter requires very exact coordination of many groups of muscles, while the former is extremely simple.

**The Approach.**—Good jumpers approach the bar in various ways, but all use a run that is gradual at first, increases slightly in speed as they near the bar, and culminates in a tremendous burst of energy in the last three strides.

**The Take-off.**—The spot from which the jumper springs varies with the style of jump used. In the right angle jump over the middle of the bar, the take-off is determined by standing in front of the bar at such distance that with the leg swung up straight the toe will just touch the bar at heights under 5 feet, and moves away

slightly at greater heights, as determined by practice. In the Sweeney jump and modifications of it, the take-off is nearer, being usually from three to four feet, because



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#### ILLUSTRATION 13. A RECORD JUMP

Brown, of Dartmouth, who set the new indoor record of 6 ft. 4¼ in.

the front leg is swung over the bar at an acute angle instead of a right angle. In the Horine jump it is still nearer, because the spring is from the inside leg and both legs go over in a line almost parallel with the bar.

**The Mark.**—All jumpers use a mark, to lead up to the take-off. Most of them put this mark 7 to 8 strides from the take-off because it takes that number of strides to get

up speed enough to clear a high bar, and the first four or five strides lead up to a climax in the final three, as described above. There is a possibility of having too much speed, so much that the jumper cannot gather himself for the final spring and is thrown into the bar instead of over it.

To find a mark determine where you intend to take off. From that point pace off seven or eight strides and make a trial mark. Start a few strides further back and approach this mark with just enough momentum to be fairly under way when you strike it. Begin to increase your speed at the mark, going faster as you approach the bar and putting tremendous energy into the last three strides. If you do not hit the take-off move the trial mark closer or further away, depending upon whether your foot struck in front of or beyond the take-off, and try again. A few trials will enable you to determine exactly where the mark should be and you can center attention on the jump. As the bar goes up the take-off must be moved further away and your mark moved accordingly.

**Special Points.**—Shorten the last stride slightly in order to gather yourself for the spring.

In taking off, the ball of the foot should strike first, with the knee bent. Make no effort to strike with the heel.

The body turn is made by the hips with shoulders and arms up.

Jump only three times a week, on alternate days. Practice at four to six inches under your best jump, but try for height once each week when you feel fit.

## CHAPTER XI

### THE SHOT PUT

The Shot Put is far from being as simple an exercise as it appears to be. There are not many motions to coordinate but the coordination must be exact to bring great distance. Good form is essential and the average man requires three seasons to become proficient.

Beginners have trouble with the body turn, which reverses the position of the shoulders, bringing to the front of the ring the shoulder that was to the rear.

**How to Start.**—If you throw with the right hand, as most throwers do, take the shot in that hand, setting it at the base of the fingers, but not in the palm of the hand, and grasp it firmly. Stand in the front half of the ring, with your feet about 24 inches apart, and your toes turned out at an angle of 45 degrees. Keep your weight on the left foot, and the left leg straight with the right leg slightly bent at the knee and your heel off the ground. Then raise the right arm until the elbow is shoulder high and the arm sticking out from the side at right angles to the body, the shot just touching the neck under the ear. Hold the left arm straight out from the side, in line with the shoulders. Shift your weight suddenly to the right leg, bending that knee considerably, with the heel merely touching the ground. This will cause your body to rotate slightly to the right if the movement is made naturally, and your left arm to swing around a little in front of you. Push hard with the right leg and at the same time thrust the right arm across your body, forward, and upward, at an angle of 45 degrees, releasing the shot. If this motion is performed

correctly the left shoulder will swing back and you will be standing with your chest facing squarely in the direction the shot has flown.

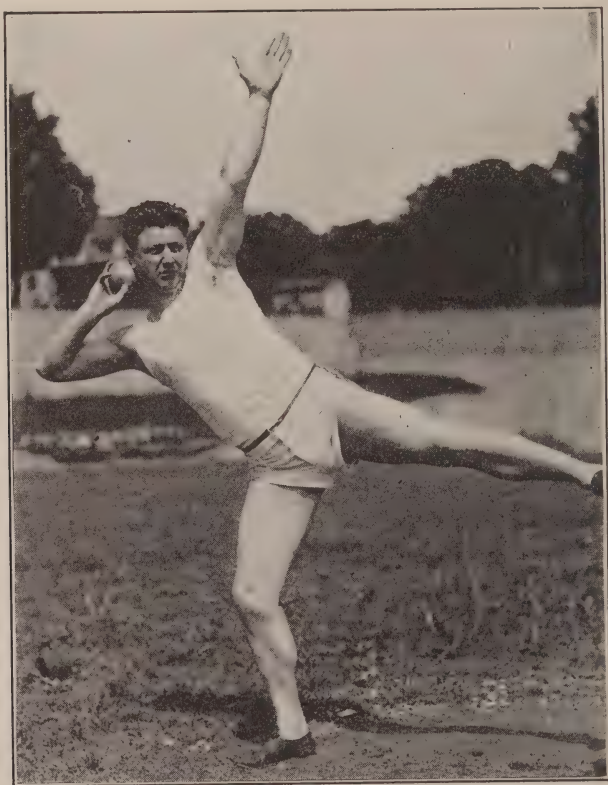


ILLUSTRATION 14. THE SHOT PUT

Ready to go. See "The Final Movement"

This is the first movement in learning the shot put. Do not be in a hurry to leave it for the next. Keep at this movement for two or three days, by which time the

correct thrust, with its coordination of leg and arm power, will have become an automatic muscular habit. A thorough mastery of this movement, slow as it may be, will bring about a saving in time in learning the shot put.

**The Second Movement.**—Take the same standing posi-



ILLUSTRATION 15. FINISH OF THE PUT

The entire weight of the body with a strong push of the left leg used in this throw

tion and the same position of right arm as for the first movement, but do not use the shot. Make the same shift of weight to the right leg, but this time, instead of simply pushing on that leg and thrusting the arm, leap upward from both legs, but leap twice as powerfully with

the right leg as with the left, thus bringing the right shoulder forward and the left shoulder back. In other words, jump up and turn around in the air. Beginners have trouble in doing this, although it is very simple. Practice until you learn it and it becomes easy and natural. Then, but not before, try it with the shot in your hand. After you have used the shot a few times look for defects. First, be sure that the thrust of the right leg and arm are made at exactly the same instant. Second, as the shot leaves your hand the latter should be up, at an angle of 45 degrees. Do not pull it down, in a circle, away from the shot, because that shuts off part of the power. Follow the shot with your hand, as a golfer follows his stroke. To do this you must keep your head up and not down close to the ground. Do not turn your body too far around as that pulls your hand at an angle from the shot and loses power. Make just turn enough to bring your right shoulder to the front. Do not aim to jump forward, just jump high with a powerful leg thrust, for the shot is put with the leg as much as with the arm. If you try to jump forward instead of upward you put too much weight on the left leg, the left shoulder comes down just before the jump and the shot is given a low angle, which loses distance and you are likely to jump out of the ring.

But be sure to use your left leg in the jump. Beginners invariably make too little use of it when they should get about one-third of the jump from it. The main thing is to get your body into the throw and it is the drive of the legs which does this.

**The Final Movement.**—You are now ready to learn to hop, which will add five to eight feet to your throw. Stand in the rear half of the ring, balancing on the right foot, with your toe turned out at an angle of 15 degrees and touching the rim of the ring. With knee bent, body inclined to the right and left leg extended upward, gather yourself for the hop. The left leg may aid in the hop

by swinging it down, and then sharply up, with a motion like cracking a whip.

In hopping to the middle of the ring both feet should strike the ground at the same time with the right a fraction of a second before the left. It is important to land on the balls of the feet, with the body inclined to the right, knees well bent, and two-thirds of your weight on the right leg. This helps you to get a powerful leg drive and the proper inclination for the throw. (The shot should fly at an angle of 45 degrees.) Beginners land with the body too erect and with too much weight on the front foot, which puts the shot low, breaks the drive of the right leg, and loses distance. The instant you land, leap from both feet with all the drive you can command, make the body turn which brings the right shoulder to the front and thrust the right arm upward and forward, completing the throw. Land on your right foot, head up, and follow the shot with your hand until it strikes.

There must be no hesitation or delay between the hop and the body turn. If there is, the impetus of the hop is lost.

The two most common errors are: (a) thrusting the arm in advance of the body turn, and (b) thrusting it after the body turn. Either throws the work of propelling the shot entirely upon the arm and shoulder, and the body weight and leg drive are lost. The two motions must be exactly together, the arm shooting out as the legs drive in the jump.

When in competition, inflate your chest, grasp the shot tightly, and let loose a tremendous burst of energy at the instant of the heave.

Do not hurry the hop. Let it be slow in comparison with the turn which follows the moment you land in the middle of the ring. Use your left leg in jumping into the turn and pull on it an instant before you spring. This single move will add a foot or two to your throw.

## CHAPTER XII

### THE DISCUS

No athletic event is more popular than the discus, and in no event does good form count for more. A light-weight man who has good form will throw farther than a heavy man with poor form.

The three main points in the order of their importance are: first, whirling the arm and body in unison; second, advancing across the ring in the whirl; and third, rising on the toe in the final heave. It is in one of these three points that many athletes fail.

When the discus is released the thrower should be almost on tiptoe, his left leg straight and tense with the push, right arm following the heave and therefore extended high in the air, and his head up. Some throwers thrust so hard with the left leg in the final heave that to prevent stepping out of the circle they make a complete turn on the toe, the right foot coming down back in the ring after the discus has flown.

**How to Hold the Discus.**—Take the discus in your right hand, its rim setting in the first joint of the fingers, which should be spread as far apart as possible. The tips of the fingers will show over the rim but the thumb will not quite reach the rim. All the grip you have on the discus is the four finger tips. In fact, you do not grip it at all, you simply set it in your hand, like a stone in a sling, and it is kept from dropping out by the swing of your arm and the pull of your hand against it as the arm motion stops. At first you will have difficulty in holding it but practice will overcome the difficulty.

**Position of the Hand in the Throw.**—The hand coming

up for the heave should be at an angle of 45 degrees to the ground, with thumb and knuckles up. At this angle the discus will fly cleanly, its edge cutting through the air. If the hand is at a right angle to the ground, the discus will fly broadside and will wobble, or if the palm of the hand is parallel with the ground, the discus will fly too low and distance will be lost.



ILLUSTRATION 16. DISCUS THROW

The preliminary swing

**First Throws.**—Stand with the left side of your body towards the direction in which the discus is to be thrown, your feet about 24 inches apart, and the toes turned out at an angle of 45 degrees. Swing the discus up to your left shoulder, knuckles up, and partially support it there by the left hand, while shifting your weight to the left leg. Then swing it down to the right and back behind until the discus comes up shoulder high, with the back of the hand up. As you make this backward swing shift your

weight to the right leg, with a bend at the knee, and allow your body to turn naturally to the right, with the left leg also bending at the knee, inclined in the same direction and lifting the heel.

Take three or four of these swings in order to get arms and body to move in unison, then, as you come up on the



ILLUSTRATION 17. DISCUS THROW

Beginning of the whirl

last swing heave the discus in the direction towards which your left side is facing. The force which propels the discus comes from the swing of your right arm, with a slight push from the right leg and a final vigorous push of the left leg, which should bring you right up on your toes. The coordination of these three forces is the thing to work for. The push of your right leg must correspond exactly with the pull of your arm as you tense the

muscles for the heave, and the left leg must pick up this push exactly at its maximum and run it smoothly into its own more violent push.

**The Whirl.**—After you get the discus to fly cleanly from the swing described, learn the whirl, which is one complete body turn. The object of the whirl is to impart



ILLUSTRATION 18. A POOR THROW

The discus is thrown too low and the thrower failed to make the final push with his left leg

greater momentum to the arm swing. Time and again you will be tempted to give up trying to learn the whirl. At first you will not throw as far with it as without it, but you must persevere until you learn it, because you can add 15 or 20 feet to your throw. There never was a champion, or even a near champion, who threw without a whirl.

**Learning the Whirl.**—The whirl is a turn of the body

on the left foot as a pivot until the right foot comes around and strikes the ground 30 inches or more beyond and a little back of the left. At this point the right foot becomes the pivot, the left is raised and, following

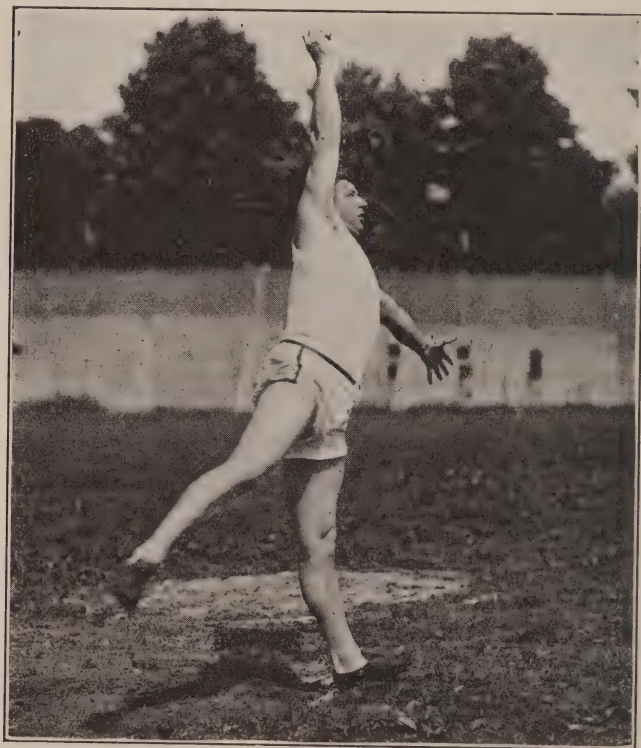


ILLUSTRATION 19. A GOOD THROW

The thrower has followed through, his entire weight behind the throw

the body motion, comes around heel first and strikes the ground about three feet beyond the right. This whirl advances you in one continuous motion clear across the ring and the impetus adds power to your throw and it

must be done on the balls of the feet. At the start of the whirl, your weight will shift to the left foot, which will make  $\frac{3}{4}$  of a complete turn. When the right foot strikes the ground your weight will shift to it and the foot will make  $\frac{1}{4}$  of a complete turn. Then as your left foot comes around, completing the turn, your weight shifts to it and you should give a powerful push with that leg.

There are several points to be considered in connection with the whirl. First, in order to get the leg push you must stand easily and flexibly on the balls of your feet and the legs must be slightly bent at the knee. Second, while the heels touch the ground alternately in the preliminary swings, neither must touch the ground after the whirl has started. Third, as the left leg comes around, bend the right knee a little to get leverage for the leg push, and so the right arm and shoulder will dip to give elevation to your throw. Beginners try to get this dip of the arm without bending the knee and that makes the discus wobble as it flies. Fourth, advance clear across the ring in the whirl. If you cross only one-half or two-thirds of the ring you lose part of your forward drive. Fifteen feet may be added to a throw by this advance. Fifth, hold the arm a little behind the body in the whirl, but not so far that the impetus of the whirl will be lost before the arm tenses and swings forward in the heave. The discus should be held not quite hip high, and the complete circle which it makes in the first part of the whirl should be parallel with the ground. As it starts on the heave which begins at the end of the circle, bend the right knee a little, tense the arm, and bring it up at an angle of 45 degrees for the throw. This bending of the right knee should begin just after the left foot leaves the ground, and the arm should be tensed just before this foot again strikes the ground in the final heave.

## CHAPTER XIII

### THE HAMMER

This is probably the most difficult of all Field Events. It is important to acquire good form at the start, for the muscles form habits as well as the mind and a faulty swing or pivot, once acquired, is difficult to change.

It is better for the novice to learn the single turn first. After a season he may undertake the double turn.

**The Swing.**—Stand with your back in the direction the hammer is to be thrown, with knees slightly bent. The feet should be 24 to 26 inches apart, with the left about 4 inches back of the line which the right toe touches, and the toes turned out at an angle of 45 degrees. With your weight on the balls of the feet, reach both hands behind to the right and grasp the hammer handle. With a strong pull start the hammer in its swing around the head. As you pull, shift your weight to the left foot and sway slightly in that direction to be braced against the pull of the hammer. Then as the hammer swings up, your body, from the waist up, must rotate on your hips slightly to the left. This carries your left shoulder back and enables you to bring the hammer up smoothly. Just before the hammer comes opposite your left shoulder rotate the latter back to the right and shift the weight to the right foot. This brings the right shoulder back, puts your weight against the pull of the hammer and enables you to continue the circle around your head without a jerk. Do not try to keep your chest squarely to the front while rotating the shoulders, but let it rotate in unison with the shoulder.

As the hammer comes around to the right it should dip

down, close to the ground. This is called the low spot and most hammer throwers prefer to have it come just in front of the toe of the right foot. The hammer should then be but two inches from the ground. The high spot is above the left shoulder, and the plane of the complete circle should be at an angle of 45 degrees to the ground.



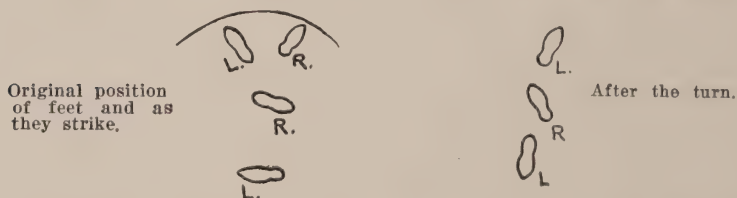
ILLUSTRATION 20. HAMMER THROW

The thrower leaning away from the hammer at the low point of the throw

- The next important point in the swing is to straighten your arms. Beginners invariably hold their arms half bent. This is a mistake. No thrower can get any distance with the arms held in that way. By straightening them you lengthen your power lever and gain more force

in the swing. Of course your arms cannot be straight as the hammer is circling around your head. But they can and must be straight as it comes to the low spot and starts on its rise again. This brings your body weight into the pull and adds greatly to the power of your swing.

Bear in mind that your body must always be inclined away from the hammer in order to bring your weight into play. When the hammer is above the left shoulder the body should be inclined to the right and your weight on the right leg; when the hammer is at the low point the body must be inclined to the left and your weight on the left leg. Hence in the swing there is a constant shifting of your weight. Stand on the balls of the feet and keep the knees bent to facilitate this shifting of the weight. The heel of each foot will come to the ground momen-



tarily when the body weight is on that foot, but it should come up again as soon as the weight shifts to the other foot, because if your heel is on the ground you cannot pivot easily. Put in several days practising the swing before you attempt to pivot or throw. When you have acquired it you are ready for the body turn.

**The Body Turn.**—In making the turn whirl your body to the left, pivoting on the ball of the left foot, making a three-quarter turn. As you continue the turn let your right foot follow naturally and strike the ground about 18 inches behind where it stood at the beginning of the swing. Do not try to throw the right foot around but let it come around naturally. As it strikes the ground your body weight shifts to it and the foot makes a half turn.

Just as the right foot strikes the ground the left comes up, follows around, heel first and in turn strikes the ground for the final heave, making a one-fourth turn about three feet behind where it was at the beginning.

The position of the feet is important in the turn, but the position of the arms is also of great importance. The swing of the hammer should be up around the left ear. This helps you to make a smooth body turn and to make it in a small space. A thrower has added 12 feet to his throw in a single day by practising this swing and completing the turn in a 30-inch circle. This is an invaluable acquisition because after you are proficient in the single turn you will want to learn the double turn and you must turn in small circles to do so.

Resist the tendency to spread your feet wide apart as it spoils your turn and takes up too much space.

Try to turn around on your toes, almost in one spot. It is impossible to get your turning circle too small.

Nothing in any field event so tries a player's patience, and so tests his determination as learning the turn. For a time as you get one part of the movement right you lose another. There will be days when everything goes wrong, but your greatest trouble will be to regulate the speed of preliminary swings and of the swing on which you make your turn so that there will be full power left for the final throw. If your preliminary swings are too slow the hammer will lag too far behind the body and all the work of the throw falls on your arms so you might as well have made no body turn. If your preliminary swings, and particularly the swing on which the turn is made, are too fast, they unbalance you and shut off power in the final throw.

**The Preliminary Swings.**—Athletes who throw with the single turn usually take three or four preliminary swings before making the turn. There is no set rule as to number.

The first swing should be slow, the second a little faster,

the third still faster, and the fourth, the swing on which you should make a body turn, faster than the third, and as it comes up for the final throw, it should be very fast. Each swing should increase the force it receives for the one which is to follow.

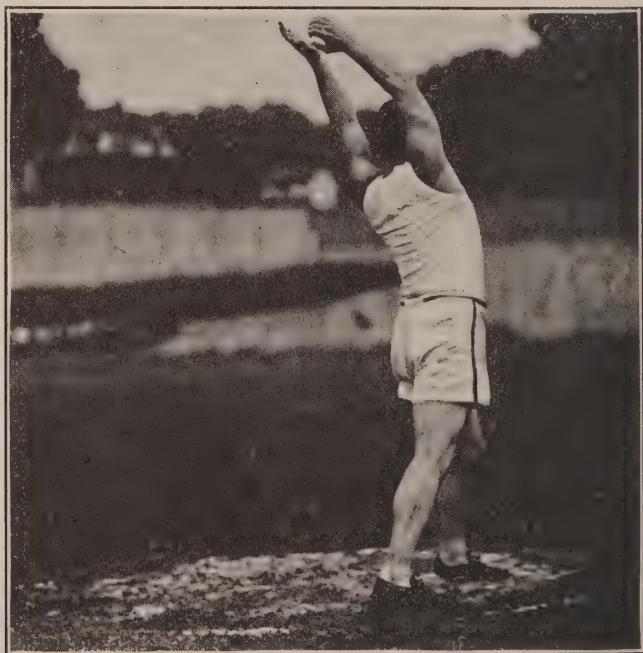


ILLUSTRATION 21. THE THROW

No thrower can hope to master the swing in one season. It is the most difficult part of the game, and you should not be in a hurry to accomplish it. Get it little by little, adding a trifle to each swing and working for good form. Make no attempt to get distance. Throwers are too impatient and want to learn the whole thing in a week. If you work for form and study yourself as you

throw, you will acquire a smooth, easy motion that will give the maximum of power. Each gain in distance must be gradual. Your muscles must learn to adjust themselves automatically to the hammer, and they will do so if you proceed patiently.

In making the body turn stretch your arms as straight as you can hold them, which increases the impetus and so adds to your throw. Do not bend forward in the final throw or the hammer will strike the ground.

**The Final Throw.**—Throw the hammer so that it seems to fly over your left shoulder. Some good throwers release it under the shoulder, but they do not have good form and lose the help of the powerful back muscles. The hammer should fly at an elevation of 45 degrees.

**The Double Turn.**—With the double turn you gain more impetus and consequently greater distance. The triple is beyond the reach of most throwers.

In making the double turn stand with both feet on the same line instead of having the left four inches further back than the right. One who has become proficient in the single moves readily into the double turn, although it is likely to take a whole season to master it. The main difference is in the turn of the body. In the single turn the thrower sets himself for the final throw just after his right foot comes to the ground, but in the double turn, he does not do so until he reaches the same point in the second turn. In the first turn the thrower should hold the hammer at arm's length with no effort to get extra force into the throw before the final turn. When an athlete learns to do this his progress will be rapid, but it is likely to be difficult at first.

The next difference is in the lean away, which begins with the first move of the hammer. The lean away must be greater than in the single turn in order to balance the weight of your body against the hammer. In the single turn your legs help to give this balance, but in the double they cannot do so except in the final throw.

## CHAPTER XIV

### DIET BEFORE A CONTEST

**Track Team.**—Runners should eat a hearty breakfast and a very light lunch. Distance men must be especially careful in this particular, for of all athletes they can least afford to have undigested food in the stomach when they race. The safest lunch is a single piece of toast, a soft boiled or poached egg and a glass of water three hours before the Meet. On this diet an athlete's stomach does not trouble him, no matter how hard the race. It seems light, but is sufficient.

Some very good mile runners breakfast about ten o'clock and eat nothing more until after the race. If a runner is troubled with nausea and vomiting, even after a light lunch, he should use this diet only. If he is not fond of eggs he should not eat them. Instead of eggs, eat a very small piece of broiled steak, medium well done. Pole vaulters, high jumpers and weight men may have an extra piece of toast.

Nervous, highstrung runners sometimes worry themselves sick during the long morning before the games, notwithstanding every care in diet. The contest should be put out of mind and the attention occupied with some entertainment which tends to complete relaxation. Reading or some other interest which does not tax nervous or muscular energy is advisable. The runner should not be on his feet, except for a half hour stroll before lunch.

**Basketball.**—This game demands sustained muscular exertion and a tremendous output of nervous energy, and requires a more substantial diet. For several years, col-

lege teams have lunched on a small piece of steak, two pieces of toast, olives or celery, with water to drink, three hours before the game. It is an entirely satisfactory diet.

**Football.**—A small steak or a slice of roast beef, two pieces of toast, a small baked potato or creamed potatoes three hours before the game puts a player in fine shape for a football struggle.

On trips to large cities, the system introduced by Dr. Sharpe, formerly Cornell's coach, may be followed very successfully. Arriving the day before the game, the players are given a hearty supper and told to go to entertain themselves, but be in bed by a fixed time. They are called at 10 A. M., taken for a short stroll, and at eleven have the lunch described above. This seems unusual but it has many things to recommend it. In the first place, if sent to bed at the usual hour the team will not get to sleep. Strange surroundings, the excitement of travel, and anxiety about the coming game will keep them awake. If called at the usual hour in the morning they will not have had sufficient rest, and with both breakfast and lunch, the latter early in order that digestion may be nearly completed by the time they go into the game, the meals will come too close together. They will eat but they will not be hungry. The morning becomes long and tiresome, and they worry about the game, which interferes with digestion. The important thing is to get their minds off the game and this plan not only does that but it brings them to their lunch with empty stomachs and a keen appetite. It also insures nine or ten hours of solid sleep the night before the game, and does away with the long, wearisome morning. An hour or so after lunch they start for the gymnasium, and are on the field ready to play at two o'clock.

## CHAPTER XV

### SPRAINS, TORN LIGAMENTS, KNEE BURNS

Always rest a sprained ankle or knee if you can, for there are sure to be stretched or torn ligaments or tendons and continued use makes the injury worse. Nature must be given a chance to repair the damage.

**Treatment.**—Steep a towel in hot water, wring it out and wrap it around the injured part. For 20 minutes or so trickle water as hot as you can bear it on this towel, so that it will soak through and steam the sprain. Then paint with iodine, bandage snugly with two inch gauze, go to your room, and elevate the limb, resting it upon the bed or upon a cushion on a chair. Nothing equals hot water applied in this way, as the first treatment for a sprain. It promotes circulation to the injured parts and relieves the pain. Iodine helps to reduce the swelling by stimulating reabsorption of the lymph. Bandaging prevents further swelling, and elevating the limb assists the return circulation and relieves the pressure on the irritated nerves. Use this treatment for the sprain two or three times a day, for two days, and especially before going to bed at night. Paint with iodine three times, on alternate days. After the inflammation has subsided, which should be inside of three or four days, gentle massage is helpful, rubbing towards the heart. Have the limb bandaged firmly when you start to use it again.

Although a sprain should be rested there are times when an athlete must play and occasions when so much is at stake that a chance must be taken. It is possible for an experienced trainer to bandage and protect a bad

## SPRAINS, TORN LIGAMENTS, KNEE BURNS 75

sprain or a Charley Horse so that a player can go through an entire game without making the injury a great deal worse. High School boys seldom have the services of expert trainers. They often go into a game with injuries inadequately protected. For their guidance the following directions are given.

**How to Bandage.**—In most ankle sprains the foot has been turned inward. If that is the case, lay the injured leg across your knee, grasp the foot, turn it out and while holding it attach one end of a strip of 2-inch adhesive tape to the inner side of the foot, about an inch above the sole. Pass the strip under the foot, up on the outside, in front of the ankle bone, across the instep, and continue it around on the inner side of the ankle to within a half inch of the Achilles tendon. Pull it as tight as you can and plaster it down securely. Lap a second strip half over the first. These strips of tape will take the strain off the torn tendons and ligaments. Cover them with two layers of 2 inch gauze bandage, starting on the inside of the foot as before, but this time continue the bandage around behind the ankle and bring it across the instep again and under the foot in a figure 8. Fasten it with a strip of tape on the outside of the foot. This is a secure brace and unless the sprain is very bad you can go through a game with it. If the ankle should have been turned *out*, lay it over your knee and hold it *in*, applying the bandage in the reverse direction.

Ankle sprains in which the foot has been turned in or out are easily bandaged so as to take the strain off the injured parts, but a sprain behind the ankle joint is exceedingly difficult to support. For this type of sprain use a saddle bandage. Take a piece of adhesive tape 2 feet long. Flex the foot, bringing the toes up as far as possible. Place the middle of the tape under the foot just in front of the heel, taking an end in each hand, one on the inside of the leg, the other on the outside, and pull up hard and plaster firmly down all along its course.

Over this put a figure 8 bandage of adhesive tape, beginning on the inside of the foot, passing under the sole, up over the instep, around the ankle, back again over the instep, under the sole, and fasten on the outer side of the foot. Then tape in the reverse direction, starting on the outside of the foot, and finally cover with two layers of gauze. Players with bad sprains of this type can go through a game in good shape when bandaged as described.

Many of the universities have greatly reduced the number of ankle sprains by furnishing each football player with two strips of unbleached muslin, each two and a half inches wide and three yards long, and requiring them to put a figure 8 bandage around each ankle before going on the field, fastening the end in front of the instep with a strip of adhesive tape or a safety pin. This bandage supports the muscles and tendons of the instep.

It is not advisable to put a sprain in a plaster cast, because first, the cast becomes loose as the swelling diminishes, and second, you cannot get at the injury to treat it. Even in the case of a sprained knee, the most difficult of all sprains to support and cure, the treatment above described is better.

**A Sprained Knee.**—Bend the leg a little and bandage snugly, taking two circular wraps about 3 inches below the knee, crossing the joint in figure 8 style, and taking a turn 2 or 3 inches above it. Then cross down again and repeat, overlapping each wrap and finishing with a circular wrap over the knee, being careful to keep the bandage as broad as possible as it passes over the Popliteal artery behind the knee, so as not to interfere with the circulation. This bandaging should be done with 2 inch gauze. On each side of the leg fasten a half inch strip of adhesive tape to the thigh 4 inches above the bandage and carry it to the lower layer, to prevent the bandage from slipping down. While resting the in-

## SPRAINS, TORN LIGAMENTS, KNEE BURNS 77

jury procure a combination elastic and metal hinge knee-brace if possible. It is the best protection against a fresh sprain.

The internal Lateral Ligament of the knee is the one usually hurt in football, and the Semi-lunar Cartilages are often torn and displaced. If the knee cannot be straightened you may be certain the latter is the case. In that event consult a physician.

**Cuts and Blisters.**—Never permit a cut or an abrasion of the skin to go uncared for during the football season. Instances have occurred in which these apparently trifling wounds became infected, and blood poisoning followed. Examine your feet every day. If the skin is broken wash the wound thoroughly with absorbent cotton soaked in some antiseptic solution, Creolin-Pearson's is excellent. Boric Acid solution will do, as will any of the dozen or more to be had at the drug stores. Dry with cotton, dust lightly with Formic Iodide or powdered Boric Acid, cover with a piece of sterilized gauze and put on your stocking. Before going on the field the next day cover the gauze with a piece of adhesive tape to prevent the wound from reopening under the friction of the shoe.

Take the same precautions during Track season if the running shoes blister the side of your foot, as they are likely to do in running. If the blister is small and has not broken, cover with a piece of adhesive tape and as a rule the fluid will be absorbed and the blister will heal nicely. But if the blister is large, thread a needle with white thread, pass it through the base of the blister from side to side and cut off the thread, allowing short ends to extend at each side of the blister. This will drain it. Cover with a piece of sterilized gauze and that with tape when you go on the field again. If there is no pain and the wound appears to be healing the tape may be left on for a couple of days, but if the foot is painful remove the dressing and treat the wound again.

Never pull adhesive tape off of a blister or the skin is likely to come with it. Remove slowly and carefully.

Tender feet can be hardened by bathing a few times in cold salt water.

Cuts of any kind should be washed with an antiseptic solution, dried, dusted with Formic Iodide, and covered with sterilized gauze if exposed to dirt.

**Knee Burns.**—Knee Burns, so common in basketball, should not be covered. They heal more quickly if simply washed with an antiseptic solution and dusted with Formic Iodide. If long underwear is worn it should be rolled up so as not to touch the wound or it will stick and retard healing.

**Emergency Outfits.**—A simple emergency outfit is needed. A good antiseptic solution, a can of Formic Iodide, a roll of 2 inch adhesive tape and a few 2 inch gauze bandages with a tube of vaseline, to anoint hard scabs and prevent cracking. Also a roll of absorbent cotton, a bottle of iodine for sprains and wounds; a can of antiphlogistine, two ounces of Aromatic Spirits of Ammonia, for nausea following exhaustion, and some tubes of Capsolin to rub on the fingers and wrists when playing football on cold days or in the snow. The Aromatic Spirits of Ammonia should be given in teaspoonful doses in water.

The above is all that a team needs. There are other things which administer to the comfort of athletes, but thousands of athletes get along every year, hardy and rugged without them. In France and Germany after the Great War Uncle Sam's Doughboys played first class football without trainers' tables and a corps of rubbers, or fine equipment of any kind. I have seen them in the Rhineland race from 100 yards up to a half mile in hob-nail shoes, over frozen ground until exhausted, and when they got their wind again laugh over it as a great joke.

**Rub Down.**—A rub down after practice lessens the stiffness and soreness that often follow, but is not a neces-

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sity, and thousands of school and college athletes play all through a season without it. Experience has shown that it is no more of a necessity than the training table. Both are good things if you have them, but if you do not, you can get along very well without them.

If you do rub down, use witchhazel as a lubricant, as it is comparatively inexpensive and quite satisfactory.

**The Shower Bath.**—Do not stay under the shower too long, because it diminishes your vitality. Three or four minutes under the warm water and 30 seconds under the cold is enough. Use warm water and soap first to dissolve and wash away the perspiration. Turn the cold water on gradually, rubbing your body while under it. Be sure to finish with cold water, as it is a tonic and it also renders you less liable to cold from draught or exposure.

Never plunge under the cold shower when your blood is boiling from exercise, as after a basketball game. Wait awhile, not until you cool off, but until the first tremendous heat of exercise is over. Then turn on the warm water first.

Do not let the water run on your head oftener than once a week. If done often it washes away the oil of the scalp, the hair becomes dry and brittle and may fall out early in life.

If you are in good condition you will experience a feeling of warmth and physical well-being on stepping from under the shower. If you have a chilly, creepy sensation, you have remained too long under the shower or your system is out of order and you should consult your Physical Director or Coach at once.

Do not use the swimming pool during the training season. It takes too much of your energy.

# FOOTBALL

## CHAPTER XVI

### FUNDAMENTALS

Football tactics vary from year to year, but the fundamentals of the game never change. The boy who knows how to carry the ball, interfere, straightarm, tackle, or to break through on defense, and make openings for backs has an understanding of the game that covers fundamentals.

Methods of defense vary with the views of different coaches. Systems of attack have their run, being devised, used through a few seasons, and discarded. The past generation has seen in turn the Guards back, Tackles back, Minnesota Shift, Lateral Pass, Spread and Split plays, and the Unbalanced Line. Of all these the last is the only one used at present to any extent, but methods of tackling and interfering do not vary with the years. Linemen make openings and break through now much in the same way as they did a quarter of a century ago. Hence a boy who acquires correct method in fundamentals gains training that will stay with him through his whole football career.

**The Line.**—Points common to the play of Center, Guard, and Tackle are discussed here and others peculiar

to the play of each position are given under separate headings.

**Relative Position.**—In offense the five center men should be together, but not so close that they are crowded. There should be no gaps between them, but there must be room to spread the feet apart so as to get a broad base and freedom for the use of the elbows.

**Individual Position.**—Correct individual position is of high importance, and corresponds to form in field and track events. Get started right when you learn the game, for if you take a faulty position then it is likely to be a handicap through all your playing.

On Offense one of the most common faults is to extend the feet too far back. This throws too much weight on the hands and the player can be jerked forward onto his face. Neither is it possible to get a strong charge from such a position. Frequently the feet are too close to each other, giving a narrow base, with no resistance to a side thrust.

Take the position from which you can get the fastest and hardest charge. The lineman who gets the jump on an opponent will drive him back. Whether your position is one from which you can be pushed back, pulled forward or shoved aside is of secondary importance if you get the jump on your opponent, for none of these things will happen to you.

The position which is best for any player depends upon his build, but when your team has the ball it is a good plan to take a crouching position. Your back should be parallel with the ground, your head up and your legs well under you with the toe of the back foot on a line with the heel of the front foot, for a boy of average build. Hold three-fifths of your weight on the balls of your feet, and two-fifths on the hands with heels off the ground, and your feet well apart. Watch the ball and your opponent.

Play lower than your opponent. With practice you

can get much lower than you think you can. Watch any champion line and see how close to the ground those big men can get. They did not take the position naturally, but were trained to it, and you can train yourself to do the same thing.

Be tense, keyed up, and charge on the snap of the ball except when your team punts or in plays which call upon you to block.

**How to Make an Opening.**—To get your opponent out of the way you must get your shoulder against his body and to get close to him you must take a long step. This is one of the important points in the game. If your first step is short your charge will be spoiled if your opponent uses his hands. He will hold you off or shove you aside. You must lunge forward, and as your foot strikes the ground, your shoulder should strike the opponent's body. It takes practice to do this but it wins when you do learn it.

Do not move straight forward in a line parallel with the ground or the defense will shove you face down and jump over you into the play. Lunge from below up, but be careful not to come up too high.

Stick the elbows out as you charge, the muscles of your arms hard and tense, and your hands against your sides. The opponent is thus caught in a cup, of which the shoulder is the bottom, your head one side and your elbow the other side. If you want to put him to the left, lunge with the left foot and catch his hip on your left shoulder, in the hollow between your head and the point of your left elbow, or vice-versa to the right. He cannot slide off to either side and get into the play. This use of the elbow is legitimate, but you must keep your hands touching your sides or it will be a foul.

**Interference.**—Getting into the interference is easy, but bothers linemen greatly. Unless thoroughly trained they lose time in leaving their places in the line and allow opponents to break through. Suppose you are Left

Guard and want to get into the running interference for a play around right end. Shift your weight suddenly to the left foot and, pivoting on it, swing the right leg back. This faces you in the direction you want to go, yet leaves you in a position to block your opponent should your tackle fail to prevent his breaking through behind you. As the right foot strikes the ground, push against it and



ILLUSTRATION 22. TURNING OUT OF LINE

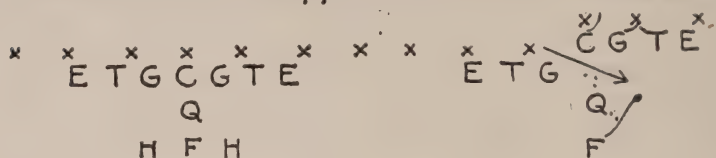
Left Guard swinging out of the line to get into the interference

run, your left foot making the first stride. Men going to the left, pivot on the right foot and swing the left leg back.

**The Line Charge.**—Some teams make the mistake of charging only that half of the line against which the play is to go, blocking the other half. This leaves a gap at center, and a defensive Guard can get through. That is not good football.

The whole line charges as one man and coaches devote much time to drilling teams in that charge.

Before ball is snapped After ball is snapped



**Aggressive Play.**—From the instant the whistle blows the contest between you and your individual opponent becomes a test of character as well as of skill and strength. Go at him fiercely. Go cleanly, but fiercely. Make him ask himself in astonishment, what am I up against? If you can demoralize him, you will be a tower of strength to your team, but if he intimidates you your work is a failure. One of you will defeat the other. When you are exhausted, remember that he is also exhausted. Whoever has the most grit will win. If it be a drawn battle, as sometimes happens, you may be sure that you have won the respect of your opponent, for football is a real game and every one admires a clean fighter who never quits.

Some men play a fine defensive game, sticking to it doggedly and taking punishment without giving an inch, but the man who wins is the one who plays an aggressive game, taking the fight to the other fellow, not waiting for the other man to bring it to him.

## CHAPTER XVII

### PLAY OF CENTER IN FOOTBALL

**Position.**—The illustration shows the ideal position on offense. Study it carefully. Note the position of the head, back, legs, and the feet. One foot about six inches back of the other. Note how the ball is held, with the weight mainly on the balls of the feet, only about one-fifth on the hands and the heels merely touching the ground. This is the best position in which to resist a side drive or a pull, a direct charge, a jerk forward, or in fact any form of attack, and it also enables a man to get a quick charge and to handle his weight and strength to the best advantage. A long-legged man with a short body cannot get this position—the hips will be higher—but he should get as near to it as possible.

**Passing the Ball.**—Pass to the Quarter Back with the fingers and wrist and do not swing the arms back from the shoulders. The shorter the motion the quicker you can get your elbows up to make an opening or to repel a charge. Get much practice with your Quarter Backs, so they will learn just how hard and how fast you pass, and so you will learn how they can handle the ball best.

Many teams have plays in which the pass is directly to the Backs. This is coming more and more into favor. Such a pass cannot be made with the fingers and wrist, and the forearm must be used. The ball must be passed just right, neither too fast nor too slow, too high nor too low. Pass right at the Full Back waist-high. Get much practice with this pass with a man charging you, or in a game you will be likely to pass the ball too high or too low for the Back to handle it.

**When to Charge.**—When a line buck is used, plunge forward as you make the pass and drive the opposing Center away from the play. Make one motion of the pass and charge if the pass is to the Quarter Back, directly behind you. When the play is around tackle or

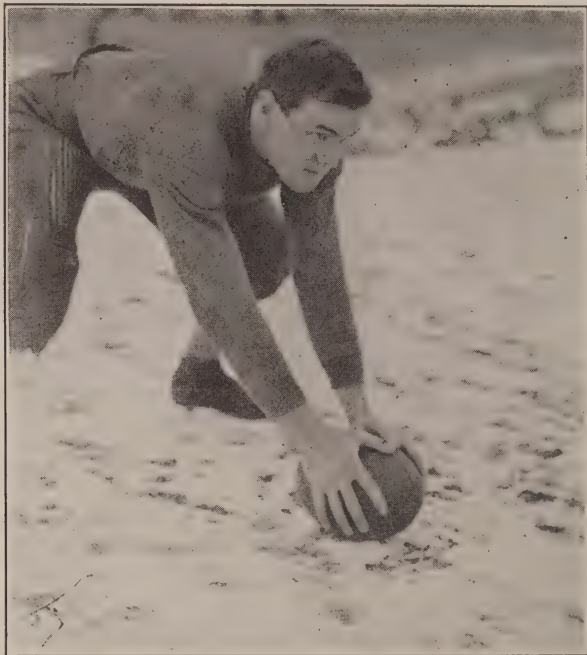


ILLUSTRATION 23. POSITION OF CENTER

end, block instead of charging, unless your opponent offers little resistance. When the play is a forward pass, block instead of charging. Vary your play in this manner, because if you charge every time you pass the ball, your opponent observing your play will step aside and grasping your head or shoulders will jerk you by and

slip through for a tackle. If, on the contrary, you never charge, he will drive his hands to the side of your head, swing you around and get through. By varying your play you confuse his attack. You should charge on a line buck because the runner hits the line near the opposing Center and you must get the latter away from the play. You should not charge on a tackle or end play because your opponent will then slip through on your off side and get to the play from behind. You should not charge on a forward pass, because your object then is simply to prevent an interruption of the pass, and not to make an opening.

**Pass for a Punt.**—Some punters prefer the end-over pass, but others prefer the straight pass, shot swiftly back from the usual grip. To make the end-over pass, grasp the ball back of its middle and whirl it over and over as it goes back. This pass brings the ball to the punter adjusted, ready to drop for the punt. The direct pass is faster, although the punter usually must shift the ball in his hands before he can drop it.

Many teams use the spiral pass. To make it, grasp the ball with the lacing up and place the left hand on the side of the ball, the heel a little back of the middle and about midway between the lacing and the seam. The forefinger of the right hand comes to within an inch or so of the point of the ball, and the other fingers dip slightly under its forward curve. Pass the ball with a free arm swing, pulling up sharply on the right hand and at the same time pushing the heel of the left into the ball and slightly downward. Practice short passes at first, gradually increasing the distance until you can spiral the ball swiftly twelve yards.

Try all three styles, select the one that suits you best, but learn the spiral if you can, and put much practice on getting the ball to the punter as swiftly as possible.

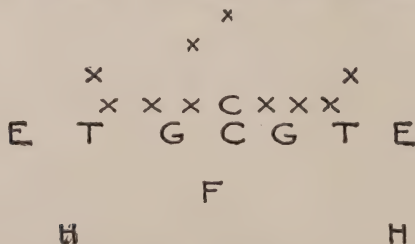
After passing for a punt, in which you must use a full arm motion, your play depends largely upon how the

opposing Center and Guards play and upon whether your Guards assist you in blocking. Generally you should go down the field as soon as you can. If the opposing Center plays back you can go at once. If he plays up and tries to break through you must block long enough for the punt to be fully completed. If the punt is close under your goal, or if opponents move another man into the line, every man in your line should block until he hears the thud of the punter's foot against the ball, and then go down the field as fast as he can go. You must make a good pass as a bad one at such a time is likely to result in a touchdown for the opponents.

**How to Block.**—It is impossible for the Center to leg-block an opponent, as a Guard can do. You must block either with shoulder and elbow, or by stepping back with one foot and lunging into the opponent if he charges through in front of you, or trip him by thrusting out your leg if he tries to break through behind.

**Follow the Ball.**—You know where the play is to go, and the moment it is under way get there as quickly as possible. You may be in time to stop a tackler or pick up a fumble. Following the ball is of utmost importance.

**When Opponents Have the Ball.**—There are two systems of defense in general use, one in which you play in the line, directly opposite the opposing Center; the



other in which you play back of the line, in conjunction with the full back forming the secondary line of defense.

When you play in the line, stand directly opposite the

opposing Center, half stooped, weight on the balls of your feet, hands side by side in front of you and as close to the opponent's head as you can get them without passing the point of the ball. Get set and keyed up, ready to drive your hands to his head the instant he passes the ball. Charge as you strike, having decided beforehand on which side you intend to break through. Sometimes drive to either side and other times drive straight back, according to where you think the play is going. The side drive throws the player off his balance and he is practically helpless. Use this side drive against a player as good or better than yourself. Against a weaker opposition the straight drive to the head or shoulders is effective.

Vary your plays; use your mind as well as your muscle. Try to discover the point of attack, basing your judgment upon the down, number of yards to gain, and style of play. Watch the ball, so that you can charge on the snap, but at the same time note anything in the attitude of the Backs that may indicate where the attack is to come. Unless you watch the ball, the offensive line, charging on the snap, will get the jump on you.

Your aim is to get through the line every time, and confuse the play before it reaches the line of scrimmage. A Center who can break through and smash plays before they get under way is a great asset to any team.

If you find that you cannot get through often, or that the play has passed when you do get through, drive your opponent back and swing out to the end, behind your own line, to meet the play. Do not swing out wide every time or your opponents will cross buck through your position.

When the opponents have only a yard or two to go, and you anticipate a line buck, play low and drive the Center straight back. Grasp the first pair of legs you see coming through, and throw your body parallel to the line. Even if the man you tackle is an interferer you

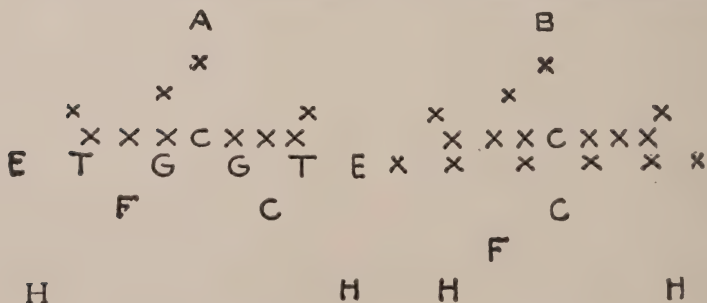
will delay the play on the line of scrimmage. You do not have to see the runner's head to stop a play of this kind, and if you play high you will be driven back.

When the opponents take positions indicating a forward pass, drop back to meet it at once, if the Backs have shifted so that they cannot buck through the center, and cover the first man who comes through.

Some centers drop back five or six yards the instant opponents take a punt formation. This may be a good play when opposing backs are so placed that they cannot buck, or when you are sure the play is to be a forward pass, but in general it is better to play in the line and drive hard into the opposing Center to spoil his pass, and then either break through to block, or drop back to form interference and cover a possible forward pass. On a drop-kick you should break through and block, or pull your opponent aside to let a teammate through.

If the opposing Center charges forward every time he snaps the ball, grasp him by the head or shoulders, jerk him past you and slip through. Play sometimes to one side of him, sometimes to the other to draw his charge, sidestep him as he comes on and jerk him by in front as you slip through on his far side.

If you play as in diagram A or B, watch the opposing



Backs, and not the ball since you do not charge on the snap of the ball, but meet the play wherever it is directed.

If you are placed as shown in diagram B, dash forward to meet an attack directed against any part of the line. It is the work of Full Back to stop a cross buck or delayed pass should the attack be a fake. Do not hesitate to determine whether it is a fake or not. Get to the spot where the line is opening, and close it up instantly by driving in at full speed. If you hesitate, the interferer is almost certain to carry you back and the runner to make a gain. If the interferer should come through before you can get to the spot, do not wait for him to come to you with the hope of holding off the interferer and stopping the runner. If you wait you are certain to be carried back a yard or two and the runner will gain that much ground. Charge at once, with stiff arms followed by the weight of your body. Your charge will throw the interferer off his stride and drive him back on the runner, forcing the latter to jump to one side where you can readily stop him.

If an end run is tried, rush around outside of your tackle to meet it, and spoil the interference if you cannot stop the runner. You must stop at least one interferer and you will often be able to stop two of them. This sometimes leaves a gap through which the Full Back can get to the runner.

Be on the alert at all times for forward passes, covering a Back or a section of the field, as your coach may direct. The writer is convinced that it is better to cover the man, and not the space, but all coaches do not agree.

Never allow yourself to be coaxed up into the line of scrimmage when playing the six man defense, and never run through the line to stop a runner unless he is clearly within your grasp. If you do an alert quarter back will shoot forward passes over your head.

Watch the opposing backs every time they line up, so as to discover their style of attack, and in this way learn to guess where the play is to come.

If you are in position shown in diagram A, dash for-

ward to meet an attack against your side of the line, but move over cautiously if the attack is directed against the other side of the line. In that event the Full Back must move into the line, and you must be ready to stop the runner if he escapes the Full Back, or to stop a cross buck or delayed pass in case the attack against the other side of the line is a fake. Also be on the alert to avoid the rush of a lineman, for if the attack is against the other side of the line one of the linemen opposite you will be sure to charge forward and try to knock you over.

On the kick-off drop back as the ball is kicked, watching your opponent and upset him about fifteen yards back.

## CHAPTER XVIII

### PLAY OF GUARD

When your team has the ball do not allow yourself to be drawn out by the opposing Guards. You must help the Center protect the Quarter Back. If the opposing Guard plays outside of you, it is the duty of your Tackle to take care of him in all plays on your side of the line except a line buck between you and Center, in which case you must turn him out away from the play.

If possible, advance the foot that is next to the Center. Otherwise it is easier for an opponent to get through and spoil the pass. If you cannot get as quick a charge with that foot forward, and cannot train yourself to do it, put the other foot forward. Take the position from which you can get the quickest and hardest charge.

**How to Charge.**—Always charge your opponent away from the play. Your opponent is the Guard or Center,

depending upon where they play and upon where the play is to go. For example, if you are Right Guard and the play is a straight line buck between you and Center, you should charge the Guard to the right, no matter whether he is playing directly opposite you or opposite the space between you and your Tackle. But if the Left Half Back is to take the ball around your Right End you should not charge the Guard if he is to your right, but charge a little to your left, helping the Center with his man and it would be necessary for your Tackle to charge the Guard. If the opposing Guard plays directly opposite you on this play charge him to your left.

Charge according to the position your opponent takes, and remember that on a play outside you must always charge the inside man away from the play. If you go after the outside man you leave a hole through which the opposing Center can pass and stop the play. Study your opponent's methods so as to meet him at the tactics he is using.

When the play is to come through your position you must make a wide opening except on a Full Back buck without interference. In this play, make a quick opening and if possible go on ahead of the runner to upset a Back. On other plays do not be satisfied with driving your opponent back a foot or so. Drive him entirely out of the play. Do not stop with your first charge but keep going in short steps, working hard with your legs.

If the play is to go against the other side of the line charge just as hard, but make a short charge, merely long enough to keep your opponent from breaking through and catching the runner from behind. Then break through in the direction of the play and you may be able to stop a Back as he is about to make a tackle.

**When Your Team Punts.**—It is not a question of driving your opponent back when your team punts as it is when you are running the ball. You simply need to prevent his breaking through. Block until you hear the



ILLUSTRATION 24. THE KNEE BLOCK

The player lunges forward and thrusts his knee between Guard's legs as the latter charges

thud of the punter's foot against the ball, and then rush down the field to tackle.

If the opposing Center drops back you should block the Guard, but if the Center plays in the line you must protect your own Center from his charge while your Tackle and Half Back stop the defensive Guard and Tackle.

**How to Block.**—There are several ways to block. One

very good way is to drop one foot about six inches back, partially turning in that direction with your shoulder low and hip high, and drive into the opponent if he tries to come through in front of you. Thrust out your leg and trip him if he tries to pass behind. You may also thrust your knee between his legs as he charges. Use the style you can use best.

You must play low to make a good knee block, and in making it do not charge from below upwards, as you would when making an opening. Watch your opponent's feet, and just as he steps, lunge forward with a knee thrust and lock him fast. This is the safest of all blocks, but you must think and act quickly to do it well and it requires much practice.

When your opponents have the ball, play low in a crouching position as when on the offense, unless instructed by your coach to play up. Watch the ball, not the Backs, for if you are watching them you will not see the ball snapped, and the opposing Guard and Tackle, who do see it, will get the start on you.

You must charge the instant the ball is snapped. Do not wait to see where the play is going or you will be boxed out of it before you are ready to move. Break through first and look for the play afterwards, deciding beforehand on which side of your opponent you intend to break through.

**Where to Play.**—On a slippery field, with a mud-caked ball, bucks are more likely to be used than end runs or passes. Play lower than usual, especially if against a heavier line, or it will slide you back in the mud.

If the Guard and Tackle are much heavier and do drive you back in spite of all your efforts, do not use your hands, but lunge low between them, shoulder first.

If your own Center plays back you should play exactly opposite the Guard, and as a rule drive your hands to the side of his head and break through inside of him. Occasionally go through outside, choosing times when

you are sure the play is not a line buck through Center.

If your Center plays up in line move out until you are opposite the space between the opposing Guard and Tackle. Drive a hand to the head of each, split them apart and claw your way through with your body low. You may not often get through, but you close the opening and it takes both of them to hold you, which gives your Center and Tackles an advantage over their opponents, since each can use his hands against a single player.

**Use Your Hands.**—Much depends upon how you use your hands. A new player will charge with bent arms and follow with a leg drive, making two motions, but you must learn to make one motion of your lunge and arm drive, and strike with your arms stiff. Even two men find it difficult to stop a charge of that kind.

If you do not get through on the initial drive continue to lunge forward pulling against the bodies of your opponents, and when you do get through go after the play whether it has gone by or not because there may be a fumble or some one may drive the interference back on the runner and force him into your hands. Keep opponents guessing by varying your play. You may grasp the Guard and jerk him across in front of you, leaping over him into the play, but it is not wise to charge one player only when you are playing opposite the space between the Guard and Tackle, unless you are certain about where the play is going. In so doing you turn your side to the other man and he can drive you in or out, leaving an opening through which a play can be sent.

When your Center is back and you are playing opposite the Guard, or opposite the Tackle, in an unbalanced line, vary your play by breaking through sometimes on one side of your opponent and sometimes on the other, and occasionally drive him sideways into the line. Hold the position first and then follow the play. If the play is directed against you, be there to meet it. If it is

directed to the off side of your opponent, drive him into the path of the runner.

If you do not vary your play an alert Quarter Back will observe that you always break through on one side and will send the play through the other.

Do not lie down in front of a play, because the opponents simply step over you and go on.

Never run behind your own line to get to a play. Break through unless you are purposely drawn back to meet a shift play or a forward pass.

When opponents line up to kick off, watch first that they do not make an on-side and recover. Be ready to charge forward and fall on the ball. When a kick-off is made, drop back, pick out a single opponent, running so as to intercept him, and dive across his knees.

## CHAPTER XIX

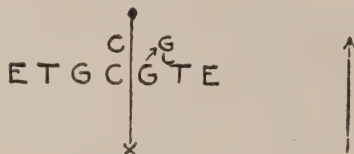
### PLAY OF TACKLE

Read the discussion on "The Line" and "Play of Guard" for the standing position and for instructions in "How to Block" and "How to Make an Opening."

When your team has the ball and the opposing Guard plays opposite the space between you and your Guard you are responsible for him in all plays that go outside of you and you must put him inside.

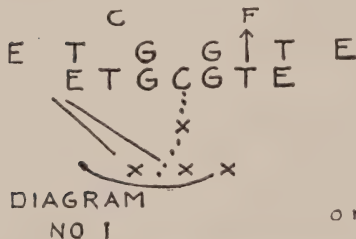


On a play between your Center and Guard, on your side of the line, both you and your Guard should charge the defensive Guard, your Guard striking him before you do, for if you strike him first you will push him in front of the play.



On plays against the other side of the line, your Guard takes care of the opposing Guard, and you either get into the interference or break through and upset a Back.

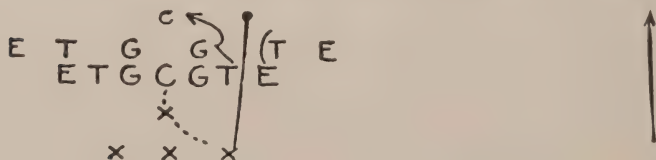
The Six Man Defense, shown in the diagrams which follow, has no player opposite you, and you must always charge through and upset a Back when the play is against the other side of the line.



or



On a line buck through your position, charge the man following if he plays as in the diagram. If opponents use the defense shown in the next diagram, push the



Guard in front of your Guard and keep going to stop the Center.

Remember that on plays going outside of you, charge the player between you and Center and drive him away from the point of attack. If you charge the man who is playing outside of you, the other will slip through behind you and stop the play.

**When Opponents Have the Ball.**—Play up, half erect, with your body bent forward at the hips and your hands out in front. Charge on the snap of the ball, driving as hard as you can against the End, knocking him in and back. You are then in a position to go either in or out to meet the play and it is your business to throw it back or stop it, whether you can get the runner or not. You must not hold your charge to see where the play is going; turn the End back first, then look for the play. Get into opponents' territory and spoil the play before the attack has had time to form. The ideal Tackle is one who can drive the End back into the play and tangle it up; then drive low into the interference to pile up and delay as many players as possible. This will pile up the offense and the End will stop the runner if he goes wide while the Backfield men will stop him if he turns in. You thus delay the opposing End until your Backfield can prevent a forward pass.

If the opposing End happens to be too big and strong for you to handle you will have trouble, but you have one advantage which he does not have, namely, the privilege of using your hands. Make the most of it, for nothing else will save the game for you. Charge, with your arms stiff, to the side of his head, hold him off and meet the play or you may await his advance and swing him off in the direction he is charging. You may drive your hands lightly against him and swing outside. But this is dangerous, because it leaves an opening for a mass drive inside. If a heavy Full Back supports you it may be a safe play. Never charge through inside of the End

unless the runner is clearly within your grasp, because if you are boxed in, a good gain is almost certain for your opponents. Use your hands, arms extended, stiff and strong and hold the End away from you.

If the play is against the other side of your line you must follow it around, behind the opponents' line, alert to upset any Back who is trying to slip around your way for a forward pass. Sometimes you can catch the runner from behind, but not often. Until you have analyzed the opponents' style of play you should move cautiously, the End following fast.

Shift your position frequently, moving out or in. The opposing End is likely to follow you and thus indicate what the play is to be.

As the game progresses, adapt your play to the attack.

Sometimes the opposing End will move out a foot or two, but you must not charge through the gap he leaves. That is exactly what he wants you to do, for he can then hold you and allow the play to go around. Move out opposite him, or pretend to charge through the gap, and as he comes in push his head downward and jump over him into the play.

If your punter kicks with his right foot you should block for a second only, if you are playing Left Tackle, then run straight down the field. Of course if he is slow in getting the ball off you should block longer, but get away as soon as you can with safety. The Right Tackle must block until he hears the thud of the punter's foot against the ball, and then proceed.

When opponents kick off, turn in towards the middle of the field, picking out a man, and run so as to intercept him with a dive across his knees.

Never run behind your own line to meet a play. Always break through, unless your team is against some shift formation which requires you to hold off your opponent and wait, or to drop back in order to prevent a forward pass.

You may find it necessary to play either opposite the opposing End or a little outside of him, according to the defense your coach adopts. In the six man defense, with the Center back of the line, the Tackle should play directly opposite the End. Some coaches may have him play a little outside. In the seven man defense, the Center in line, the Tackle usually plays from one to three feet outside of the End.

Some Tackles crouch, with both hands on the ground; others place one hand on the ground and draw the other arm back, half bent, in order to get a drive. Most Tackles play half erect, their weight on the balls of their feet, tense, ready to drive the instant the ball is snapped. This in the opinion of the writer is the best position.

## CHAPTER XX

### PLAY OF END

When your team has the ball, play close to your Tackle unless instructed by your coach to play out. Take the crouch position, the same as other linemen. The defensive Tackle will often move in or out, trying to induce you to follow and thus indicate the play. Do not change the position you take when the signal is given, no matter where the play is to go or how the Tackle moves.

**How to Box the Tackle.**—Some Tackles will come at you fiercely on the snap of the ball and try to rush you back. Others will await your charge, hold you off and circle around you, or put their hands to your head as you charge, knocking you off your feet and then jump over you into the play.

The only way you can stop the first type is to watch his feet, duck his hands as he comes in, and either dive across his knees or lunge forward, thrusting your inside knee between his legs, and with a half turn of your body roll back on him, throwing your weight on his leg. This is the best way to stop a charging Tackle.



ILLUSTRATION 25. BOXING-IN A TACKLE WHO PLAYS OUTSIDE

The other type is easier to stop. By pretending a charge you can draw his hands, duck under them and get his body against your shoulder, in the hollow between your head and elbow.

A Tackle frequently plays a little outside of the End, which makes it more difficult to box him. When against a man who waits, you have time to change your base by

pressing your weight on your hands and shifting your feet, which puts you in a better position to stop him. Follow this shift with a quick lunge across the front of his outside knee, with your head low, half turn your body and roll back on him, throwing your weight on his leg and locking your elbow under it. This leg shift must be done quickly and requires much practice, but it is well worth while, because in no other way can an End, unaided, stop a Tackle who plays outside of him.

In turning the Tackle out, charge from below up, and not straight forward, because if you do he can easily push your head down and jump over you into the play. Get your shoulder against his body, and press your head against him if he tries to work through or use your elbow to keep him from working around behind you.

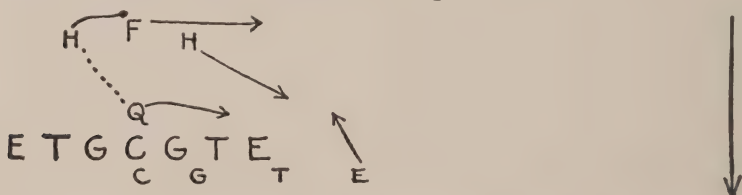
When on defense, play about three yards from the Tackle, and charge the instant the ball is snapped. Never wait for the play to come to you but break the interference before it is formed. Take one leap, diagonally forward, then charge quickly, the body low and parallel with the ground and your arms out in front. Use your hands, except when two men come at you side by side.

The ideal End is one who can slip through the interference and stop the runner. Learn to make a sudden start as though about to go in or out, and it is sure to draw the interference that way, with the runner turning the opposite way where you can get to him. There is no more effective end play. It is always safer to move out than in.

**How to Break Interference.**—You will meet the following styles of attack: two men side by side and shoulder to shoulder, two men in a file, or two men running about five to six feet apart, with one coming straight at you and the other turning out. The latter style is the most dangerous.

In meeting them keep your feet and do not take your eye off the runner except when the interference comes at

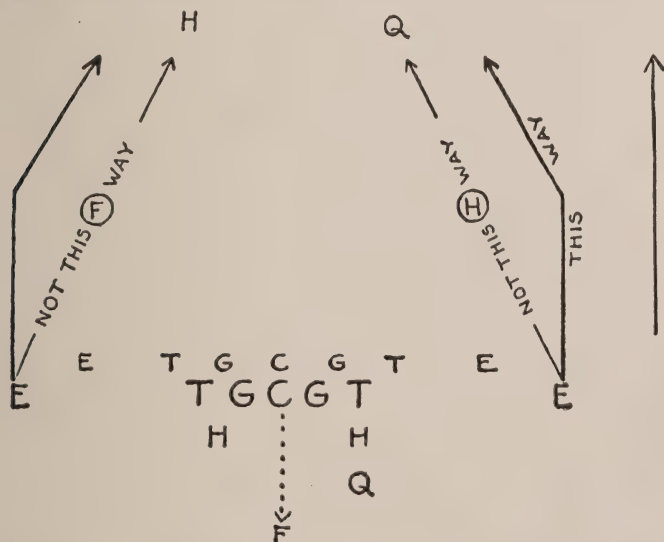
you in the style mentioned first. The only thing to do in that case is to dive across their knees and stop them, but aim at their knees, not at their feet. No End can stop two good men coming at him in this way, and stay on his feet. It is better to pile up the interference behind the line, before the play gets under way. The runner must then either go wide, alone, becoming an easy victim for the Half Back, or attempt to get through a narrow space and be met by the Full Back on the line of scrimmage. To meet the second style of attack, grasp the leading man by the waist, stretch your arms at full length and with body and legs extended hold him back. This crowds both men back on the runner, who will have to jump to one side. Be on the alert for this jump and the moment he turns push the interferer the opposite way and dive for him. You will get him easily. The third attack is the harder to stop.



If you go wide after the second man, paying no attention to the first, the latter will turn to the left, strike you from the side as you go by and drive you out. The second will then turn in, the runner at his back, and the Quarter Back at his side. If you dive into the first man, or hold him off, the play will go wide, the second man staying between you and the runner. You must stop both of them. Use your hands with a side drive to push the first man in and jump for the second. You will have time to put the first aside and push the second back, forcing the runner to come out from behind, when you can tackle him. This is where the advantage comes in meeting the play before it is formed.

If the attack is against the other side of your line, follow behind the opponents' line, watching to stop any Back waiting for a criss-cross. Never run behind your own line to meet a play. Do not follow the End on your side if he goes out for a wide play or a forward pass. Call the Half Back's attention to him while you guard your own position.

**How to Advance Under a Punt.**—If the opposing End plays opposite you start one way but then go the other, using your hand to shove him off his balance. If



the opposing End pays no attention to you, leaving the Back to guard you, run as fast as you can, watching the Backs who are to catch the punt and the man who is to block you. Do not look over your shoulder to see which direction the punt is going, because the way the Backs are running will tell you that. Run so as to turn the Back in and do not go in a direct line at him or he is likely to side-step and get around you for a long run.

Swing out a little, then turn in and the man who is to block you will either wait for you and try to run alongside and jostle you, or run in front to impede you. He may drop back as you come along, keeping inside and ready to dive into you as you are about to tackle.

If he tries to jostle you, remember that you are permitted to use your hands and you can throw him aside. If he tries to upset you, use your hands as he comes in, swing your legs out and go on. If he does throw you, get up at once, and you will often get to the runner before he can pass. If he drops back with you, waiting to throw you as you tackle, use your wits, turn one way and go the other, using your hands if he comes on.

On the kick-off go straight down the field until you are sure the runner cannot swing around you. Do not cut in diagonally from your starting position.

Be careful not to overrun when going down on the kick-off or under a punt. If the opponent is coming towards you, check your speed just enough to gain control of yourself before you tackle, so that he cannot sidestep, then dive into him. Always get your head in front of him when tackling from the side, because that prevents his tearing loose from your arm and getting away. As your shoulder strikes, your arms should grasp and hold. Bear this point in mind in open field tackling when you meet a runner at an angle.

Theoretically, in the six man defense, with the Center back, the Ends should charge straight in, dive under the interference and stop it, relying upon the second and third line of defense to stop an end play. This is effective against a team if the second and third line of defense are fast and can be relied upon to stop end runs and criss-cross plays, but otherwise it is dangerous. It is safer for the Ends to take one leap diagonally forward and then charge.

## CHAPTER XXI

### BACKFIELD PLAY

**When Your Team Has the Ball.**—Backs are in danger of indicating the play by the position of their feet, the angle of their body, looking towards the point of attack, or by swaying in that direction before the ball is snapped. You must stand facing the scrimmage line, no matter whether the signal is for a line buck, tackle or end play, or whether you are to carry the ball or interfere.

Take the crouch position, either one or both hands on the ground, feet fairly wide apart with the toe of one opposite the heel of the other, three-fifths of the weight on the balls of the feet and two-fifths on your hands. Get set, tense, keyed up, like a man on the marks for a sprint. Take care that in your eagerness to get off quickly you do not allow your body to sway in the direction of the attack, and keep your eyes on the ball until it is passed.

**How to Carry the Ball.**—Whenever a team fumbles continually you may be sure that the ball is not carried properly. Most Backs hold the ball in the pit of the stomach with both hands when making a straight line buck, but that is a dangerous way to carry it. If the Back is brought down on the ball and some other player falls on him he is knocked breathless and the ball is lost in the mix-up.

There is only one way to carry the ball for every kind of attack except a forward pass, and that is in the crook of the arm with the elbow close to the side. When the ball comes to you, slide your fingers to one end, jam the other end under the arm pit and hold it fast. If the play is a line buck, bring the other hand over to cover the ball as you burst through the line; if a tackle

or end play, carry the ball under the off arm and have the other ready to use.

To use the straightarm, shove the arm forward, rigid, with the heel of the hand to the opponent's head, and at the same time swing the legs out away from him. A Back should always be able to use this defense against a player who tackles high, and get away.



ILLUSTRATION 26. BACKS ON OFFENSE

For all purposes the position shown by the Full Back here is the best

**How to Run with the Ball.**—In bucking the line run low, bring the knees high, and drive hardest when about to be stopped. The opening is usually momentary, and generally narrow, therefore you must hurl yourself into it at top speed. Do not shorten your steps. A runner who keeps his knees high and body low is hard to stop, for the tackler can neither clamp both knees together nor catch him around the waist. If tackled high he can often twist loose. This twist is worth learning. Few Backs know how to use it effectively. Simply whirl hard and suddenly away from the tackler as he stops you, and *keep running*.

In running an off-tackle play or around the end keep the body higher, say at an angle of 45 degrees, so that you can drive hard and yet pick an opening. Be sure you do pick the opening, and not run stupidly against your own linemen, with an opening a foot away. Some of the best plays at tackle start as though going around the end, but turn in or cut back. In such plays do not start off at your best pace but hold speed in reserve until the opening is found, then run through it at full speed. In going around the end stay with your interference, because distance is lost by breaking away too soon. It is usually better to stay as long as a single interferer is left, although sometimes it pays to break away and rush through an opening, but such occasions are rare.

When you get free, with no one between you and the goal but the safety man, try to dodge him. Carry the ball in front of you in both hands, make a thrust of the arms or a side-step, feigning to go one way, then spring off in the other direction or if you see that he is sure to intercept you, turn in towards him when about six strides



away, as though you intended to cut in behind him. Practice this turn until it becomes natural. He will invariably turn in, so as to meet you on what he thinks is to be your new course, but as your inside foot strikes the ground, in the second stride from him, leap sidewise into the original course and with your last burst of speed you can escape. This requires very clever work and few Backs can do it. A Back who does it well can in-

variably fool the first tackler, and frequently two in succession. It is the very best ruse a runner can use.

If you can neither dodge nor straightarm the tackler, shorten your stride to gather yourself, and jump into him with all your might. This will gain distance. When tackled curl up around the ball as you go down and fall around it, not on it. In this way you are not likely to get hurt, nor lose the ball.

**How to Interfere.**—Being able to make good interference for a teammate is one of the most valuable qualifications a football player can possess. To interfere for a tackle play, run low, the inside shoulder lower than the other, and catch the tackler with the inside shoulder, running hard as you strike. If you can keep your feet in this way your interference will be more effective, because you can carry it further, and by driving your opponent back you can force him in the way of a second tackler. If he is too big or too fierce for you to handle in this way, you must dive across his knees as he comes charging from behind his line. A small man can put a big one out of the play if he has the courage to do it, but many players hesitate to leave their feet. They are afraid to do so, because they do not know exactly how to go about it without getting hurt. They get a fall or two in their first attempts, sprain a wrist or loosen the ligaments around that point in the shoulder where the collar bone is tied to the shoulder blade and are reluctant to try again, but it is a simple thing to learn and once learned it is easily performed. There are several points, none of which are as hard as they appear to be. First, crouch low as you dive, and launch the body parallel with the ground. Second, aim just below the knees, your body at an angle of 45 degrees to the direction of the run. Third, strike with the fleshy, full muscled back of the hip. Fourth, as you fall, half bend the under arm and drop on the tensed muscles of the forearm, the latter parallel with the ground. Many players drop on the

hand, and sprain a wrist. Others drop on the point of the elbow, and hurt the shoulder. If you drop on the bunched muscles of the forearm, you will not get hurt.

Don't strike your opponent knee high or above the knee. If you do, his knee may hit your ribs, and that means a bad hurt. Don't turn the body too much, for you are likely to get hit in the back, and that means a worse hurt. Don't launch your body at right angles to the direction in which he is running. That will stop him, but you will get a bad jolt. You do not have to hit hard. Glide across him at an angle of 45 degrees and you will slide easily to the ground. In learning it you can go off by yourself and practice the lunge and drop on soft turf. Take short lunges at first.

**How to Forward Pass.**—All Backs should be able to pass the ball swiftly and accurately from ten to twenty yards. It is simply a matter of practice. The larger a man's hand the better grip he can get and the better he should pass. A man with a small hand can improve his passing by gripping the ball near its rear end. He can also learn to pass well by laying the rear fourth of the ball on his hand, fingers and thumb spread, and get the spiral motion by sharply drawing the arm across the front of his body as he throws. In making a ten to fifteen yard pass use the arm exactly as a catcher throws the ball to second base, turning the heel of the hand up as you let the ball fly. In a twenty to thirty yard pass, use the arm as though you were throwing a fly to a fielder on the diamond, and be doubly sure that the heel of the hand is turned upwards. In either pass, if the heel of the hand is inclined down when the ball flies, the pass will shoot downward.

**How to Catch a Forward Pass.**—Catch forward passes in your hands, exactly as you would a baseball, but instantly draw the ball to the chest.

**Punting.**—The one essential in punting is a quick, hard leg drive. The elementary principles of punting can

be picked up in a few days' practice by even an indifferent punter, but cannot be learned from books. The one thing that you must get is a terrifically quick, powerful leg drive. The knee must be rigid, toes turned down and the leg swung from the hip. The ball must be dropped on the instep, its short axis at right angles to the foot.



ILLUSTRATION 27. INTERFERING

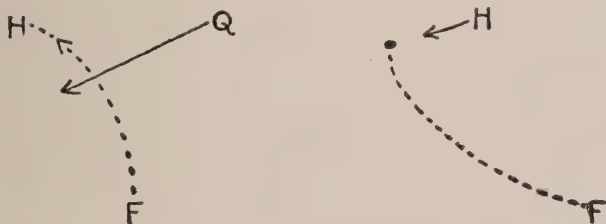
Half turn your back to the tackler as you approach. As you slide to the ground whirl over and keep on rolling

Ordinarily the foot should meet the ball about 18 inches from the ground. The ball must be dropped in such a way that it does not turn in the air while falling, because if it does it will not meet the foot at the proper angle and the punt will not go as far and true as it should.

The safest way to hold the ball to prevent its turning, is to grasp it on each side with the fingers spread, the point of the ball turned down at an angle of about 10 degrees. The palm of the hand must not touch the ball.

To punt high, drop the ball in close and step in under it. To punt low, drop it a little further away and meet it a little lower, about 16 inches from the ground. To make a spiral, drop the ball diagonally across the foot, its rear half striking the instep, and swing the leg slightly in.

Never take more than a single step to punt, because every step you take brings you that much closer to the line of scrimmage and increases the chance of your punt being blocked. To punt with a single step, stand with the toe of your punting foot about six inches in advance of the toe of the other, and your weight on the punting foot. As you catch the ball, push off with the punting foot, take one step with the other, and punt. Step in the direction you intend to punt. Keep punt away from the Backs, and especially from one who is good at running them back. It is surprising how many punters punt



directly into the arms of the waiting Backs. The ball should always be placed to one side or the other, making the Back run for it and making it difficult for his mate to interfere for him.

When the wind is with you, punt high, so that it will carry the ball. When it is against you, punt low, as the high punt will be driven back. On a calm day when the

wind is light, alternate high with long, low punts, and you will have the Backs guessing. They will not know whether to play far away or close.

**Where to Stand.**—The punter usually stands about 8 to 10 yards back of the line. Every man should take his own distance, depending upon his quickness and cleverness and upon the strength of the line. Slow punters with a weak line should be 10 to 12 yards back. Men who get the ball off quickly, or who have a good protective line, can safely be as close as 8 or even 6 yards. If you can punt close it is an advantage, as the punt will go that much farther beyond the scrimmage line. Take the distance that suits you best, no matter where other punters stand. The distance must allow you to get in the full power of your leg drive without being hurried.

Regulate the distance of your punts by the speed of the Ends. If the Ends are slow, punt high and not so far, giving them time to get under the ball as it falls. It is useless to punt the ball beyond them just to gain distance if by so doing you allow the runner a chance to get under way.

If not too far from the sideline, punt so that the ball will cross the sideline just before it strikes the ground: then they cannot run it back, and you gain the full distance of your punt. If, however, a strong wind is blowing across the field towards the sideline, you must allow for it and punt into it, enough to make it carry the ball across the sideline as it drops and not when it is high in the air, with a short punt as the result. When near the sideline do not punt towards the wide side of the field unless a quartering wind forces you to do so. This gives the Half Back too much latitude in running the ball back. Keep the ball along the sideline, where he will have to run straight forward and meet your entire line.

A punter will not be able to place his punts in a game unless he invariably does it in practice. If he punts at the Backs in practice he will instinctively do it in a game.

Make up your mind where you intend to place the punt before calling for the ball, then get it off as quickly as you can.

In practising, acquire the habit of getting the ball off quickly. Always work with a Center to pass to you. Have him pass the ball chest high, then you can take one step and drive it.

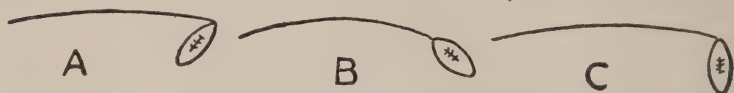
The ideal play is to have a signal that opponents will not recognize as a punt signal, for then they will not send a second man back to cover the field. This enables you to run back, turn, and be in position to punt before they recognize what is happening. As soon as they see that you intend to punt, one of the secondary defense will run back, and their Quarter, in the middle of the field, will move over to the side away from that to which his teammate is running. This is your chance, and while the man running away has his back to you, send a long, low, rolling punt over his head. The Ends advancing with the punt can reach the man as he gets it and prevent his running it back.

This has the further effect of weakening the defense against plunging plays, because after you have worked it a few times on a team they will draw one of the secondary defense back and keep him there.

To work this play your line must know beforehand just which man each intends to block. This is done by the Guards blocking Center, Tackles blocking Guards, Half Backs blocking Tackles, and the Quarter Back blocking End on the kicking side. Place the punter behind the Guard instead of the Center, a little further away from the End. When Guards block the Center in this way your Center has nothing to concern him except to make the pass, and after passing he should break through the line and go down the field to tackle.

Do not punt too much early in the season. Your thigh muscles will get stiff and sore and be slow in healing.

**How to Judge Punts.**—Watch the point of the ball. If it sails through the air as in A it will fall where it looks as though it would. If as in B it will go further than seems likely, because the point offers less resistance to the air than the side. Be careful that it does not shoot over your head. If it stands like C it will fall short of



where it seems to be going, and especially so if it is going against the wind. If the point is to one side, it will curve towards that side as it drops, somewhat as a curve ball breaks at the plate.

**How to Catch Punts.**—Hold your hands and arms loose, almost limp, and as the ball comes down reach out and guide it with your hands into the pocket formed by your arms and chest. You do not catch it with your hands, you simply guide it into the pocket, and your hands follow the ball, keeping in touch with it and pinning it as it settles.

The chest must be drawn in, limp. If you hold the chest out, firm, the ball will bound out after striking, but if the chest, arms and hands are limp the ball will settle snugly into the pocket and stick there. Never have the hands side by side. One should be closer to the body than the other, by six inches, or a little less than the length of the ball. The hands coming in with the ball form a pocket, the bottom of which is the inside hand.

Do not take your eyes off the ball to locate the on-coming tacklers. That increases the chance of a fumble. Give attention to nothing but the ball until you catch it, then decide which way to run, and remember that usually the best way is straight ahead.

When opponents make a short, high punt, you should make a fair catch, especially if you are near their goal.

Their Ends will be upon you before you can run it back, and a fair catch gives you two chances. First, if you have a good man at place- or drop-kicking he can score three points without interference. Second, opposing Ends are likely to tackle you notwithstanding the fair catch signal, and you get the 15 yards they are penalized.

## CHAPTER XXII

### PLAY OF HALF BACK

**When Opponents Have the Ball.**—The play of the Half Backs is usually 8 to 10 yards back, in the third line of defense. On a play against your side of the line, go in at once and tackle the runner or break the interference, if he is protected, and do not wait to analyze the play before you start. On a play against the other side of the line look first at the End opposite you. He may slip off for a cross forward pass. You can tell by his actions whether it is a genuine attack in the direction threatened, or whether the real attack is coming your way. If the attack is genuine, move over towards it to support your teammate. He may be put out by the interference, in which case you must stop the runner. By watching the End you can easily forestall a forward pass. If you watch the Backs a fast End will get the start on you and beat you to the pass.

Try to guess every play, according to the down and the number of yards to go. You can learn to anticipate a large number of the plays.

If the opposing Backs shift, you must shift far enough

to cover them. If the opposing End on your side shifts ten to twenty yards from his tackle, apparently to get a forward pass, move to within five yards of him. Do not expect your End to cover him, for he dare not leave his own position.



ILLUSTRATION 28. CATCHING PUNTS

As you line up after each play, glance to the side to see if any opponent is far out for a wide play. This play cannot possibly succeed if the defensive Back is alert, yet it is carried out frequently. Whenever it succeeds, it reflects upon the Back, who has been negligent. Intercept a forward pass when you are sure that you can

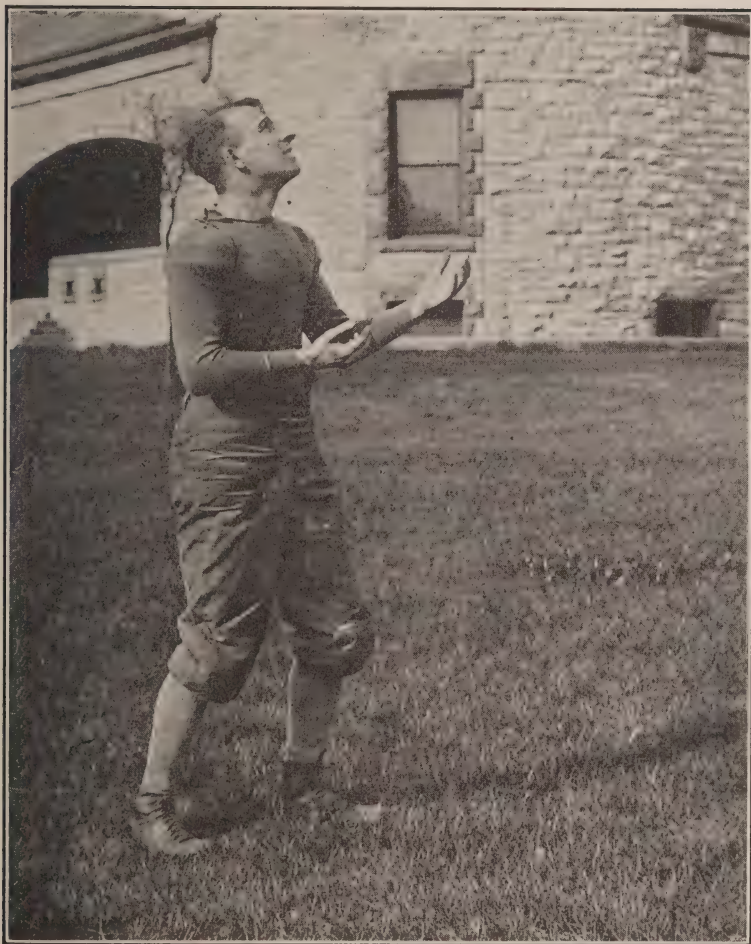


ILLUSTRATION 29. CATCHING PUNTS

do it, but if there is any doubt as to whether you or the offensive player will get it, bat it away. You can do

that often, when, if you jump with the opponent for the ball, he may get it away from you and make a big gain.

On wet days and a muddy field, forward passes are not likely to be used much except in an emergency and you can play up close to stop line plunges.

When you are sure that opponents intend to punt, one of the Backs must drop back to help the safety man take care of the punt. If he does not, a clever punter will place a low, rolling punt to one side of the single man back, and it may give a long gain. Once you do make up your mind to go back, get there quickly. It is a mistake to hesitate, looking back as if uncertain whether to go or not.

**Play of the Safety Man.**—Usually the Quarter Back stands 25 to 35 yards back, according to the wind and the ability of the opposing punter. He comes up on every play and if a man breaks through he is in position to tackle him. Be careful that the runner does not sidestep and get around. He will, if you run at him with full speed. Run hard until you are sure you can intercept him, then check up slightly to gain control of yourself and be able to turn, no matter which way he jumps.

Try to guess the play likely to come, basing your guess on the down, distance to gain, and the kind of game opponents are playing. Move up or back, to meet the play you are expecting.

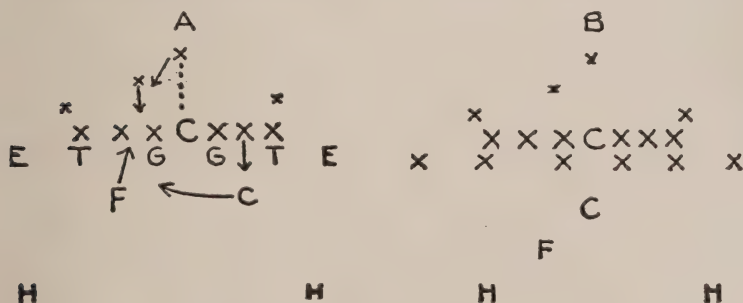
When opponents punt to you, run straight forward as soon as you have caught the ball. Waste no time swinging off to one side in the hope that interference will form. You will run further by swinging wide, but you will gain less ground. This is especially true on a slippery field, where you cannot keep your feet in going fast around a wide turn. Run straight forward as soon as you catch the punt. This draws the Ends in, and then is the time to swing wide if at all.

## CHAPTER XXIII

### PLAY OF FULL BACK

In the old style straight football, when a Back simply lowered his head and broke through the line, or turned to one side and circled the ends, and all teams used the seven man defense, with the Full Back about three yards behind the middle of the line, the latter simply had to dash forward the instant an opening appeared, plug up the hole, and stop the runner in his tracks, or, if the play was an end run, turn out to meet it. To-day, when cross bucks, delayed passes, criss-crosses and the forward pass are included in the plays, the man backing up the line has a much more complicated problem to solve. His style of play must depend upon whether his team puts six or seven men in the first line of defense.

The six man defense came with the forward pass, and is in general use when the pass is prominent in the attack. There are two variations of it in general use.



In the defense shown in diagram A, the Full Back should dash forward to meet an attack directed against his

side of the line, and the Center should advance more slowly, ready to stop the runner if he escapes the Full Back, or to meet a cross buck or delayed pass should the attack prove to be a fake, and the real play through Center against him. The Full Back should not hesitate in meeting an attack against his side of the line. He must not wait to determine whether it is a fake or not. The Center is responsible for fake plays. The Full Back must get to the spot where the line is opening, and stop it, driving in at full speed. If he waits, the interferer is almost certain to carry him back and the runner will make a gain.

If you are playing Full Back in this defense, and an interferer comes through before you can get to the spot, do not wait for him to come to you with the hope of holding him and stopping the runner too. If you try this you are almost certain to be carried back a yard or two and the runner will gain. Charge at once, stiffen your arms and drive to his side, following with the weight of your body. That will throw him off his stride, drive him back on the runner, and force the latter to jump to the side, where you can readily stop him.

To meet an end run plunge around your Tackle, breaking through outside of him and stop the interference if you cannot stop the runner.

Never allow yourself to be coaxed up into the line of scrimmage, and do not dash through that line to get a runner unless he is clearly within your grasp. If you do this, an alert Quarter Back will shoot forward passes over your head.

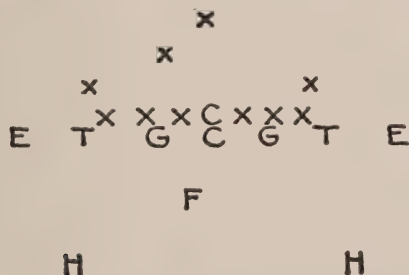
Be on the alert at all times to avoid the rush of a lineman, for if the attack is against the other side of the line, one of the linemen opposite you is sure to charge forward and try to put you out of the play. Watch also for forward passes, watching the Back on your side of the line, or covering a certain space, as your coach may direct. Watch the opposing Backs every time they line

up, observing their style of attack, and in this way learn to guess where the play is to come.

In a defense like that shown in diagram B, the Center must rush forward in the direction of the supposed attack, leaving to you the duty of stopping a cut-back or a delayed pass. Always place yourself opposite the point on which the opposing Backs mass. In this defense some Full Backs move from one side of the line to the other, seeking to discover where the attack is to come and to be where they can meet it. Sometimes they even play back, in line with the two Half Backs, but this is not considered good football.

The defense shown in diagram B is better than that shown in diagram A, because the Full Back is not so readily put out of the play by a lineman. He is also in a better position to analyze the play, and to meet forward passes.

If you are playing Full Back in the seven man defense, watch the ball, not the man. You dare not charge in to



meet a play until you are certain the play is going where it appears to be. If you do, you are likely to be caught by a cross buck or a delayed pass. This appears to stamp the seven man defense as weaker than the six man defense, but there are other factors which enter into the play and balance this apparent disadvantage.

In the above defense, when playing against a team using the cross-buck, play opposite the man with the ball.

Do not jump into the interference and allow the runner to slip through behind you. On the other hand, against a team using straight bucks, watch for the line to open for the runner, dive into the hole as it opens, and stop it or get the runner. Should a man get through behind the interference, the Backs will stop him. If you try to hold off the interference and get at the man you will be driven back and there will be a gain for your opponents.

Never start through the line to intercept an end or tackle run unless you see that you can get to the runner. Meet him on the line of scrimmage.

Watch the Backs for indications of the play, for unless thoroughly coached they will give it away.

If a forward pass is used, cover the nearest Back.

**How to Tackle.**—If a runner is coming through the line, straight at you, lower your head to one side just as you would duck a lead in boxing, and lunge forward to meet the runner with your shoulder, at the same time clamping his knees together and falling with him. Never have your head up in meeting a runner who is coming through the line on a buck, because if you do his head will strike your nose. This method of tackling should be used by linemen as well as by men backing up the line.

If a runner is free in the open and you are between him and the goal, run fast until you are in front of him, gradually slow up, coming almost to a stop, and gather yourself for a leap to either side. If you run hard, straight at him, any clever runner can sidestep you and get away. As he leaps aside, lunge forward, head low, so that he cannot straightarm you, strike him with your shoulder and clamp his knees together. Be sure that your head is in front and clamp your arms as you strike.

If a free man is running at an angle to your line of approach, trying to escape by sheer speed, there is no time to slow up and no need for it. Run at him hard and dive in making the tackle, *your head in front of him*. If your head is behind his knees he will pull away.

## CHAPTER XXIV

### PLAY OF QUARTER BACK

**The Pass.**—The pass from the Center to the Quarter Back requires careful attention in offensive play. Some Quarter Backs stand close under the Center, others about a yard away. Some face the front and a few face to one side. Some take the ball directly out of Center's hands, others catch it after a short pass, and still others form a pocket of their stomach and arms and receive it that way. The latter is a poor way, because the Quarter Back should get the ball away instantly, before the defense crowds the play and spoils the pass. Time is lost in grasping the ball to pass it. The best way is to catch the ball in your hands on a short pass. This also helps the Center, because the shorter the distance he puts his arms back to make the pass the quicker he can get his elbows up to resist the opponent's charge or to help make an opening. More practice is necessary to learn this style of play, but it is worth it.

**How to Stand.**—The best way to stand is close behind the Center, facing to the front, as low as you can stoop without hiding the ball from the Full Back. Keep your weight on the balls of your feet. In this position you are hidden from the opposing Backs, and the Center makes a very short pass so he can give you better protection from the charge of the defense.

Some Quarter Backs signal for the ball by opening their fingers, or turning their hands, or by pinching the Center's leg. These are poor signals because your own line cannot see them and the defense can, so they will get the advantage of the charge.

The best plan is to get in position, ready to receive the ball, while you are calling signals, the Center to make the pass any time after a certain number is called. This number may be the fourth or fifth or a certain numeral. The Center should pass as soon as he can after the signal number has been given, but if he happens to be in a poor position he must get properly set before passing.

**How to Pass.**—For a line buck, shove the ball at the Full Back, striking him in the pit of the stomach, and withdraw your hand as you pass. For a Tackle play the pass is short, only two to three feet, and a little higher, about half way between shoulder and stomach. Get under way as you pass for an end run, otherwise you cannot interfere effectively. Take two or three steps, pass the ball chest high while running, and be sure you do not pass it at the Half Back's shoulder or behind him. Pass it just a little in front, where he can take it without slowing up.

The instant the pass is made take your eyes from the Back and look for the man you are to put out. He will stop you, instead of you stopping him, if you are looking back over your shoulder.

Do not pass hard, because fumbles are caused in that way. Pass the ball quickly, but don't drive it. It means much to the Back to get the ball just right, and if it is too low he must break his stride to take it. If too high, too hard, too far back, or in front, he fumbles it.

**Signals.**—Give signals in a tone that drives the players. Put force into your speech. If you drawl the signals the team will work sluggishly. Call each number distinctly, with a regular fixed interval between and do not slur them into each other.

**How to Interfere.**—The Quarter Back being a light man, the most effective way for him to interfere is by diving across the runner's knees. The Quarter Back is in a splendid position to stop the defensive Full Back on end or tackle plays. The Full Back is not looking for

him, and is running high, from behind his own line, with his eyes on the man carrying the ball. It is a simple matter to dive across his knees and throw him.

**When Opponents Have the Ball.**—The Quarter Back plays down the field as a safety man on defense. Regulate the distance according to the wind and the ability of the opposing punter, somewhere between 25 and 40 yards, and advance on every play. If a runner breaks through he gets that much less distance before you tackle him. Be careful that he does not sidestep and get around you. He will if you run at him as hard as you can go. Run hard until you are sure you can intercept him, then check up slightly to gain control of yourself so that you can reach him no matter which way he jumps.

Guess the play likely to come, basing your guess on the down, distance to gain, and the kind of game opponents are playing. Move up or back to meet what you are expecting.

**Plays.**—You must study the defense or your plays will not succeed. Do not select a few plays before the game and call them blindly, as you think they ought to go. Plays that succeed against one defense often fail against another. Try every part of the opponents' line early in the game, and observe weak places, so you can select plays to send against that part of the line.

Until you have discovered what part of the line is weak, observe the defense before giving the play. If Tackles play wide, run a play inside of them. If they are close, use an end or off-tackle play.

If the Center runs out to meet the plays, try a cross buck through center. If the Backs close in to stop a run, shoot a forward pass over their heads.

Use a strong play for first down, experiment with end runs or doubtful plays on the second, or second and third downs, depending upon how much ground is still to be gained, and whether you are in a section of the field where you can experiment. Punt or forward pass on the

fourth down if you think a run will not make the gain needed. If you are in opponents' territory and have a running play or forward pass that is succeeding, it pays to take a chance with it on the fourth down.

When you find a weak spot, take advantage of it, but not in your own half of the field if the wind is behind you, nor if a gain can be made on an exchange of punts. You should play a punting game until you are within striking distance, before using your strongest plays. Many times teams use up all their best plays in a useless attack starting from their own 25 yard line and carry the ball 50 yards only to lose it on downs, because the defense is learning how to stop the attack. Save your strong plays by punting if you can, and use them when you have a chance to carry the ball over the goal line before opponents learn how to stop your attack.

An end run on fourth down is generally a poor play, but there are times when it will succeed. Use it near the enemy's goal line, when they are massed for a line buck and expecting nothing else. Such occasions are rare, and end runs should be tried on any down except the fourth.

When against the wind, or in the lead with but a few minutes to play, use a running game, without punting until forced to do so. Give as few chances as possible to be forced back on an exchange of punts, or for a score through the recovery of a fumbled punt.

When you recover the ball within 15 or 20 yards of your own goal, in a close game, punt on the first down, especially on a wet day and with the slippery ball. A fumble here may lose the game.

Choose your plays according to the down and the position of the ball. For example, if it is the first down near the right hand sideline and the opposing left end is weak, use a down to run wide around opponents' right end and so gain room to attack their weak left. Or if it is the fourth down and 2 yards to go, do not try a line buck, as

that is what is expected. Use a play that has been regularly gaining 3 or 4 yards if you have one.

Use your wits all through the game. If the score is against you in the last quarter and opponents are not weakening, use emergency plays, forward passes, etc., with the hope of taking them unawares.

If against a team as strong as your own, punt frequently on first and second downs, providing you do not lose ground on the exchange of punts. It is useless to use a running attack when you can make but one or two first downs and are then forced to punt. The opponents are learning how to meet your attack, and if you should be fortunate enough to get near their goal they are likely to hold you. You cannot expect to carry the ball over then, with the man who ordinarily plays 30 yards back now up in the defense. If your plays will not give more than one or two first downs in the middle of the field against ten men they are not likely to do so near the goal, with eleven men to stop them. Against equal strength you should punt early and often whether the field is dry or wet, and especially if it is wet and the ball slippery, providing, of course, that you do not lose ground on the exchanges. By playing this way, and using an occasional line buck or forward pass from punt formation, you keep the opponents guessing and disturb their defense. They do not know whether to send a man back or not. If they do not, you can send a low, rolling punt to one side of the single safety man. If they do send a second man back you have a better chance to use a forward pass or a line buck. Running the ball for three downs against equal strength, and punting on the fourth down, is useless. If opponents do get possession of the ball in their half of the field your team will stop them after a first down or two.

If you are winning easily there is no use in punting. Neither is there any reason for taking a chance of losing the ball by trying a forward pass. Study the difficulties

for yourself as the game progresses. You are responsible for the team and if you use no ingenuity the team has little chance of winning against equal strength.

**The Forward Pass.**—No department of the game has had such development in recent years as forward passing. At first an experiment, later an emergency play, the forward pass is now recognized as an integral part of the attack. It is used principally in the zone between the 30 yard lines, for there a team can take a chance with the hope of making a substantial gain. It is always a chance, for the pass, while much safer than it was five years ago, is still likely to be intercepted by an alert backfield. With many coaches the day of promiscuous forward passing is gone. The ball is no longer thrown far down the field to a group of players with the hope that one of them may get it. On the contrary, the play is carefully devised, either one or two men are assigned to receive the ball, the others form a screen and are used as decoys to draw off the defense. Any team having a man who is adept at uncovering himself, and catching passes, and a passer who can shoot the ball deliberately and accurately, has a great asset.

The forward pass is also used considerably as a fourth down play under the opponents' goal, but while it occasionally succeeds there, even against good teams, the chances are against it. Only in the most desperate circumstances should it be used under a team's own goal, for if intercepted the opponents are likely to secure a touchdown from the plays that follow. The selection of plays should be governed by the following rules:

Against equal strength, play a punting game if you can hold your own at it, and watch for fumbled punts. When inside the 30 yard line use your strongest plays and score before your style of attack is discovered.

Against greater strength, you should play for time. Punt only on fourth downs, or when you must. Keep the ball out of opponents' hands.



14—7—12—13. The play goes outside of the lineman called.

The other system uses one number to show who is to carry the ball and where he is to carry it. This numeral is usually the second or third number called and is known as the key number. For example, 21 may mean Full Back to left of Center, 23 Left Half Back between Left Guard and Tackle, 25 Left Half between Left Tackle and End, 27 Right Half outside of Left End. If the second number has been agreed upon as the key number, Full Back to left of Center might be 36—21—45—98, or any other combination of first, third and fourth numbers, since they have no meaning. The key number can be readily changed from the second number to the first or third if the opponents discover it.

Spread Plays are indicated by calling Formation A or B or F, etc. Shift Plays, by calling Line, Guard, Tackles or Ends Back; or, Guards, Tackles or Ends Over, as the case may be, then adding the play numbers.

The latter system is generally considered the better of the two. It, or some system based upon the same principle, is in general use.

## CHAPTER XXVI

### KICKS

**Kick-Off.**—Set the ball on a tee about four inches high and point it away from you. The toe should strike the lower end of the ball. This will give you a longer kick than any other position of the ball will give, and will also give height enough to let your Ends reach the Back by the time he makes the catch.

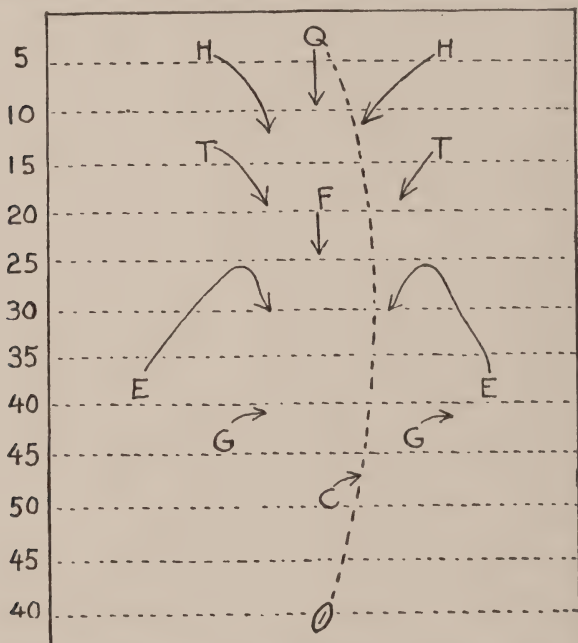
Most teams put their best catcher and runner under the goal posts, as many kick-offs are made straight down the field, exactly where they should not be. The interference can form more effectively for a catch in front of the goal posts than anywhere else. The kick should be made so the ball will drop in one of the corners of the field.

In kicking off and in punting keep the ball away from the opponents' best Back and never kick in his direction.

**The Drop-Kick.**—In drop-kicking keep your eye on the ball and pay no attention to the defensive charge or to the cross-bar. Do your sighting before you drop the ball, then hold your eye to the spot where you want your toe to hit and allow for a cross-wind if there is one.

**How to Run-back the Kick-off.**—The Quarterback is usually placed under the goal, as many kick-offs are made straight down the field. Notice that no men are placed between the 20 and 40 yard lines, as the ball seldom drops there. The team is massed around the spot where the ball will fall, so that they can promptly take positions in forming interference. Should the ball accidentally fall in this middle section, the Tackle or

Full Back can get it ahead of any player on the kicking side and usually carry it 10 to 15 yards straight forward before being stopped. The Center and Guards, usually the three heaviest and slowest men, are placed in front with the Guards 7 yards back and 7 yards away from the

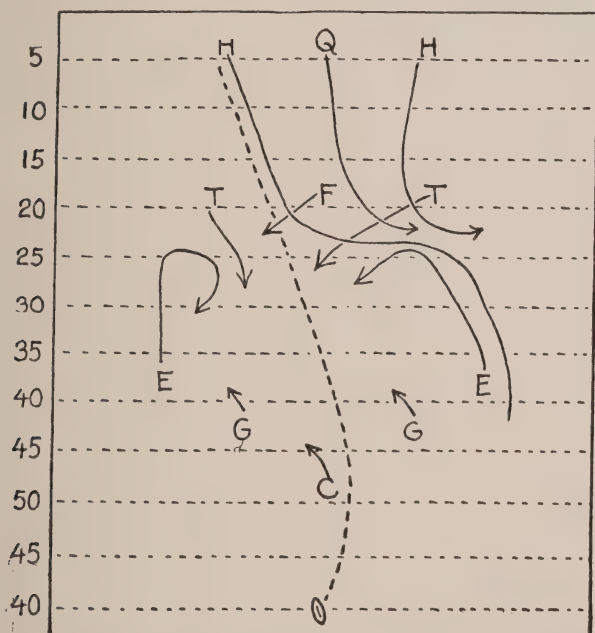


Center. They must not wait to block, but each turns and runs at an angle towards the player he intends to stop and dives across the player's knees.

Ends, instead of Tackles, are placed next, 7 yards back and 7 yards away from the Guards, because they are faster than the Tackles and can get back into the interference faster. They turn and run at full speed, turning in when about 15 yards from the on-coming runner, and as they turn each picks the man he intends to stop, paying no attention to what the runner may be doing or

where he may be going. A player who divides his attention between the runner and a tackler is easily put out or avoided.

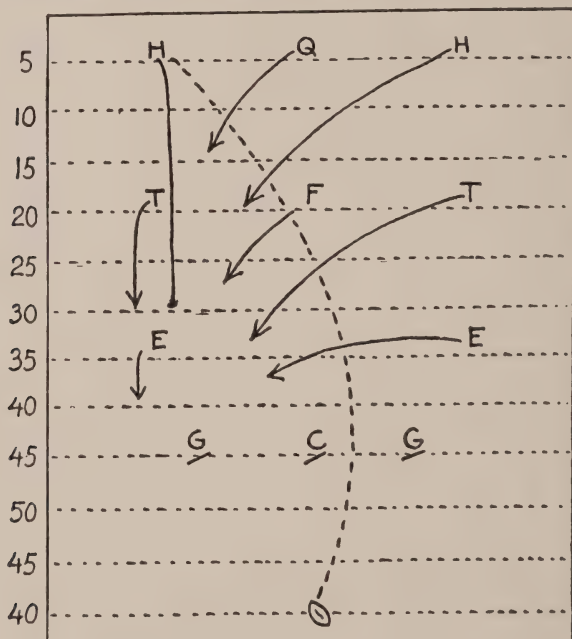
The Full Back waits until the runner is 15 yards away, then picks his man and stops him. Tackles, as shown



by the diagram, merely move over about 5 yards from the runner. They usually have to meet the on-coming Ends.

In this way the runner is not crowded, his own men are not in his way, and he has room to pick a course through the lanes that are opened. The principle of the plan is, first, keep away from the runner instead of crowding around him, and, second, give your undivided attention to the on-coming tacklers. Let the runner take care of himself.

Should the ball be kicked to one of the Half Backs he should run forward at an angle of about 20 degrees instead of swinging around in a wide curve to the center of the field. This will draw the attacking line towards him, and he then turns again, going down the other side of the field, the Quarter Back and Half Back taking the outside men and other players each stopping an opponent.

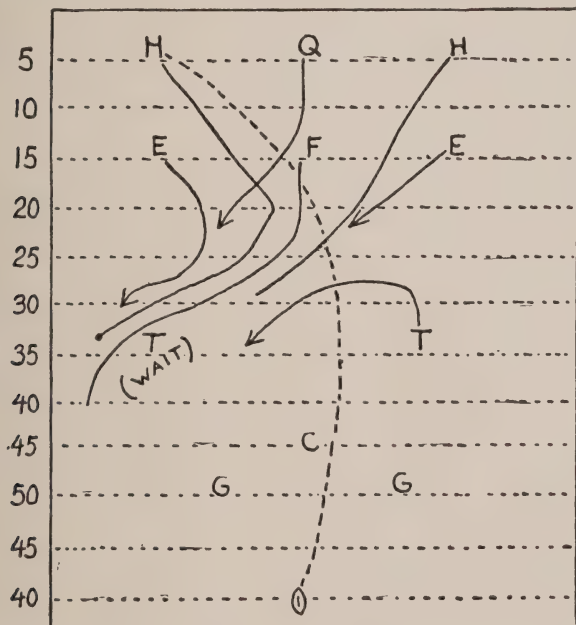


Should the ball go to the Full Back or Tackles they run straight forward, expecting no interference and waiting for none. The Center, Guards and Ends must be on the alert for a short, rolling kick.

It is a good plan to carry the ball straight down the sideline, on the theory that at least a third of the on-coming players are too far away to get into the play. In this play the Center and Guards wait and block. The

Right Tackle and Right End stop the opposing End and Tackle and form interference for the runner.

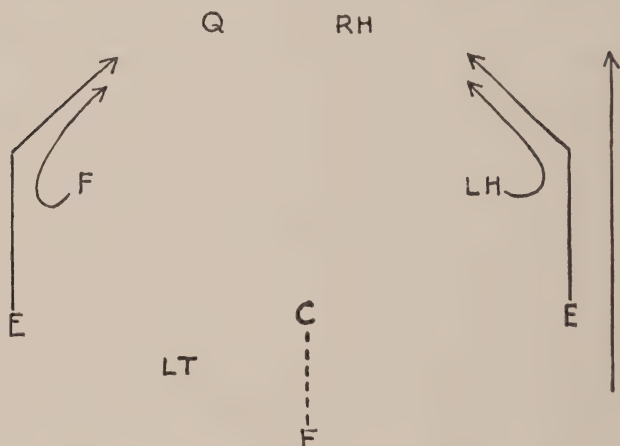
Another plan places the Guards on the 50 yard line to handle any short, rolling kick. On a long kick they drop back with the Center, pick a man and stop him. The Right End stops the opposing End, assisted by the Quarter Back if necessary, and the Right Tackle waits,



to see what will develop. The Right Half Back turns in towards the center of the field to draw the charging line that way, then swerves suddenly to the right, running behind the Full Back.

**Returning Punts.**—The importance of thorough drill in running back punts is realized by few coaches. More ground is gained in running back a single punt than is possible in three or four downs, and it is gained at a

trifling expenditure of energy. A team should be drilled in this for half an hour at a time two or three days each week. More than thirty minutes is likely to stiffen leg muscles and make them sore. Line up the Center and Ends, putting the Left Tackle five yards back and the punter at the usual distance. Put an opponent against the Center to drive into him and hurry or spoil the pass. Place two swift Backs 40 to 50 yards away and two 10 yards away on the defense to block the Ends. The Tackle and Ends charge as the Center passes the



ball. Have the punter place his kicks so that the ball will not strike where the players stand. Some kicks may be short, others high and on opposite sides of the field. Have several sets of Backs and Ends and let them run in turn. A team will be well repaid for time spent in this work. The Ends get training in avoiding Backs, and practice in tackling. The Backs get practice in catching punts with men coming down upon them, in dodging the tacklers, and in interfering for each other. Center gets practice in passing.

Men approaching the End must be in position to spoil

a forward pass if one is attempted but not try to upset him when only a short distance up the field, because he will get to his feet again and tackle the runner. The best way is to drop back with him, keeping him covered all the time, and throw him about five or six feet from the runner, just as he takes his attention from the tackler and centers it upon the runner, preparatory to tackling.

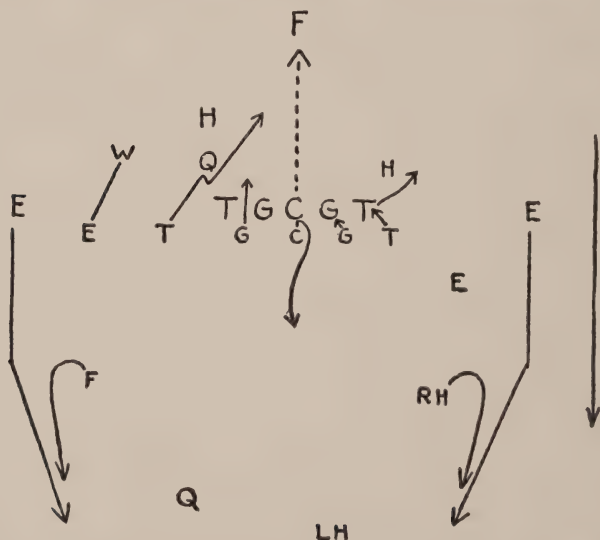
**Plays from Punt Formation.**—Every team should have at least five plays from punt formation. An end run, a line buck, a punt, a drop- or place kick, and a forward pass. When Pennsylvania had one of her strongest elevens, they ran nearly a third of their plays from punt formation, using Hollenback, the punter, in one play out of every four. Defensive Ends cannot block against a team which has a fast man to run around the ends from punt formation. They must play cautiously, and this helps the punter by giving him more time to punt.

The team should have a line buck from punt formation in order to prevent the defensive Center from dropping back to cover forward passes.

Two good forward passes are better than one, but more than two are unnecessary. The Quarter Back will use only the best and time spent on the others is wasted.

A team should have several styles of defense for punt formation plays, and should adjust its defense to the opponents' attack. If opponents do not use an end run, or if their punter plays too close or is slow in punting, one of the defensive Ends can safely charge and block. If end runs are used it is not safe for the Ends to try to block; they should leap straight forward about six feet and then play according to the move of the punter. If he tries an end run they are in position to stop him. If he punts they drop back into the interference as quickly as possible. If opponents are lined up in such a way that they cannot make a line buck, or if they do not use this play from a punt formation, the defensive Center can

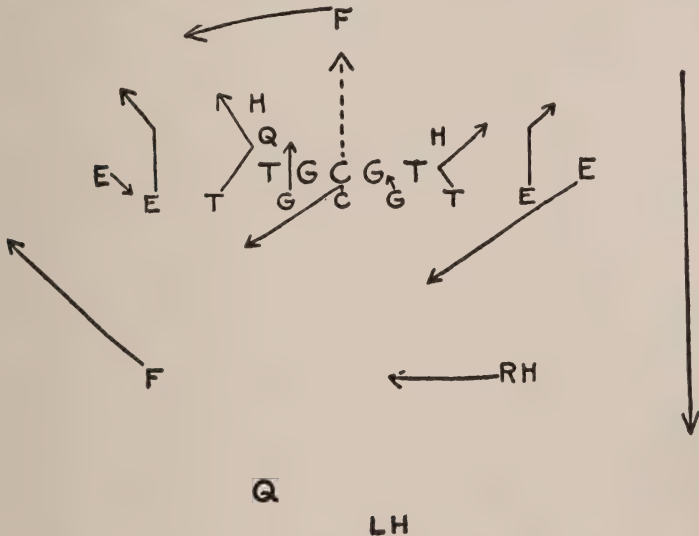
drop back to intercept forward passes or to protect the Backs. Against a team that uses forward passes, the first duty of the Left Tackle (or Right Tackle if two Backs line up opposite him) is to charge the Back near him. He may then hurry the punt or pass while the other Tackle should be on the alert to charge the Back opposite him if the Back runs forward. A Tackle can readily tell when the play is to be a forward pass, for the Back instead of waiting to block him, as he would if a punt were to follow, will dash forward to receive the



pass. The Tackle must meet him before he passes the line of scrimmage and stop him or, failing in that, delay him, because the secondary defense has dropped back to stop the Ends and there is no one else to stop him.

Do not try to block every punt. Outside of the opponents' 35 yard line it is better to prevent their linemen from advancing under the ball. To do this, the Guards, and the Tackle on the punter's kicking side should charge

forward toward the Punter; the Center should charge the opposing Center to spoil the pass, if possible, and to delay his going down the field. The other Tackle should run into the opposing Tackle and thus delay him. This preserves interference for your Back and gains ground in running back punts. It has the further advantage of putting opponents off their guard when you do block, which you will do when they punt within 25 or 30 yards

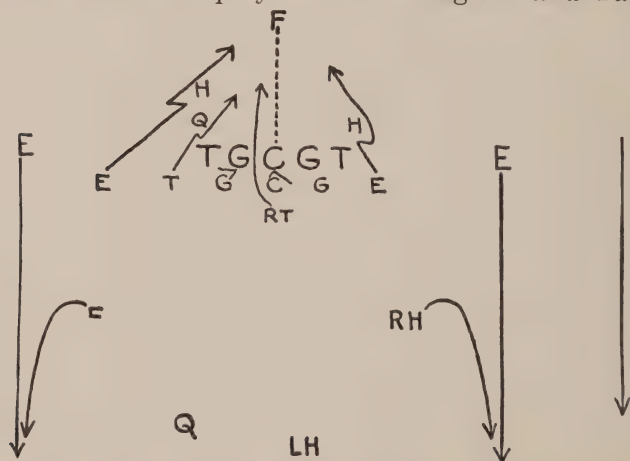


of their goal. They will be accustomed to the style of play you have been using and will be expecting it, so will be unprepared for a new attack. Your chances of blocking the punt will then be greater. The preceding and following diagrams show how to meet the styles of attack mentioned.

When opponents punt the Center charges the opposing Center fiercely, then drops back into the interference. The Left Guard charges through the opening and holds both Tackle and Guard of the opposing team. The Left

Tackle rushes the Quarter Back and hurries the punt, blocking it if possible. The Left End jumps forward and prevents a run around his end. The Right Guard turns the opposing Guard in and tries to break through. The Right Tackle charges his opponent to delay him, and then runs out. The Right End waits until the ball is kicked, then drops back into the interference, stopping any linemen who have broken loose. The Full Back and Right Half Back upset the Ends. (Diagram page 140.)

In the defense for an end run from this formation the Center and Guards play as in the diagram and Tackles



run wide after stopping their opponents. The Ends jump straight forward about six feet and tackle the Full Back if he tries an end run, or turn to interfere if the ball is punted. The Full Back and the Right Half Back stop the Ends.

In blocking a punt the defensive position is the same as that used to prevent the line going down the field under a punt, except in the case of the Right Tackle and Right End. The Right Tackle keeps a little to the right of the Center to prevent the opposing Right Guard from

stopping him. This Guard is usually giving his attention to the defensive Left Guard and thinking only of how to hold him. The position is the same, with the exceptions mentioned, but the play of every lineman is different from what it was when no attempt was made to block and the strength of the play lies in this fact. The Center pulls his opponent to the right. The Left Guard pulls his opponent to the left and the Right Tackle plunges through the gap, leaping up to block when he is about 10 feet from the punter. The Left Tackle dashes at the Quarter Back but sidesteps. The Left End charges at the Half Back but also sidesteps. The Right End should pretend to charge the Half Back on the inside and sidestep, and the Right Guard charges straight through.

**Following the Ball.**—No team is well coached unless it is thoroughly drilled in following the ball. In 1911 Princeton won the championship on this play.

If a man is blocking he must break through in the direction of the ball as soon as he has delayed the opponent long enough to let the play pass. If a defensive lineman breaks through he must get to the ball just as quickly as possible. Every man should get to the play just as soon as he has made an opening, blocked, interfered, broken through, or performed his first duty. In case of a fumble he is then in a position to be useful.

To drill the line on this play put a man opposite and facing the Center, give him the ball, let him roll it out behind him at different angles while the lineman lunges forward and falls upon it. Number the players and call two or three numbers each time the ball is rolled. Get them in the habit of going after the ball whenever it is loose.

## CHAPTER XXVII

### TRAINING

The first two weeks of the season should be devoted largely to the fundamentals of the game, teaching the line how to make openings, block, break through, etc. Train the Backs in carrying the ball, interfering, catching punts and tackling. Teach the Ends how to box a Tackle, break interference, go down the field under punts, etc. If there is no coach the captain may do the coaching and, in that case the line should be managed by a lineman, and the Backs by one of their own men.

Give an hour daily to these fundamentals, add 30 minutes of signal drill, then run the team about the field, carrying the ball in formations.

After the first week add running back punts, kicking off, running back the kick-off, and tackling the man carrying the ball. Start scrimmage after ten days of this work. Make it short at first, about ten minutes, and give every man a chance. After the schedule begins, the games coming every Saturday, scrimmage two or three days each week. As the season advances the men get hardened and can stand longer scrimmage. A team cannot make its plays succeed without scrimmage enough to teach the players how they must play against an opponent. This knowledge can never be gained from signals, no matter how perfectly they are run. Signals serve two purposes: they teach the men how to run plays, and they give a team speed. There should be no lagging when a team begins signal practice. Twenty minutes of fast, driving play is far better than forty minutes of easy play. The team is being taught to think and

move quickly both in thought and action, but signals cannot take the place of scrimmage.

Signal practice shows a man how he ought to play; scrimmage teaches him how he can play. Use just enough scrimmage to teach this and to harden the muscles. Do not overtrain. Train too little rather than too much and keep the team on edge.

Have no scrimmage on the day before or the day after a game. On Fridays the practice should be very light. Catching punts, drop-, place-, and goal-kicking, and a few minutes of signals. Devote Mondays to learning new plays and perfecting old ones.

Watch your men closely. Nervous, high-strung fellows who put every pound of energy into the game must rest occasionally or they will become overtrained. Big husky chaps, and fat fellows can be worked right along, day in and day out. They develop slowly and much work is needed to make them fit, but once trained they last. Make a study of each man, and you can tell by his looks or by the way he moves whether he is getting too much work or not.

Rest a player at the first sign of injury, even for only a day. Work will make the injury worse, especially if it is a sprain. Practice punting and drop-kicking, with the defense trying to block, and change positions. Have one side punt and drop-kick and the other block. There should be much of this drill. If it is done only occasionally the drop-kicker is likely to become excited in a game and hurry his kick, while the line and Backs will not have had enough experience to protect him properly.

Give the Ends and Backs much practice in catching forward passes.

Twice a week at least, early in the season, have the Backs practice dodging, and straight-arming a tackler while carrying the ball.

After they have become proficient in catching punts teach them to catch the punt and start running, in one

motion, and thereafter practice it three times a week, with the other Backs interfering. Work in pairs.

If the Backs do not interfere well, line up a skeleton team, putting End, Full Back and one Half Back on defense against them, and practice running interference. In a short time they will show great improvement.

**The Line.**—Give much attention to the line. It is possible to get along with poor Backs if you have a strong line, but good Backs with a weak line can do little. The line must not only be able to make holes for the Backs but it must also be able to do its share of the defensive work. Many coaches fail to realize the importance of line drill. Nowhere does careful drill give greater results than in the line. Daily during the first three weeks of the season players should try to learn how to make holes, block, and break through. Work against each other, in opposing lines, with a man to carry the ball on a direct pass from Center. Each lineman should practice the work he will do in a game, the Center breaking through Center; Guard through Guard and Tackle; and the Tackle charging the End. After ten minutes reverse the lines, giving the ball to those who were breaking through. The offensive line gets practice in making holes; the offensive End practice in boxing the Tackle, putting him out, dodging his charge, etc. This drill is hard work and the man who does his best at it is likely to be the one who can be depended upon in a game.

After this drill try sprints, to train in getting off as a unit, to improve wind, and to learn to start quickly. Line up side by side, giving the Center the ball. On the snap of the ball charge as hard as you can for 5 yards and take 10 to 15 more to slow down. Do this again and again, up and down the field a couple of times. Then form in a circle and practice falling on the ball for a few minutes.

During the first three weeks run the line around the field at a trot as the last work of the day. The line does

not get as much running as the Backs and needs this extra work.

After the first three weeks the line will get in scrimmage all the training it needs, but it is a good policy to keep up the wind sprints, advancing under punts, running back the kick-off, etc. Early in the season have the linemen report on the field early and practice kicking off, place- and goal-kicking, before squad practice. They are steadier at this than the Backs and drive the ball farther.

**The Backs.**—While the linemen are working in one part of the field have some one coaching the Backs. No player should stand around doing nothing, or work without supervision, if it can be avoided.

Have punters kick to the Backs for ten minutes, giving special attention to those who are likely to be the mainstay of the team. Then practice carrying the ball, interfering, dodging, straightarming and in catching forward passes. Call on the Ends after they have worked a while with the line.

**Scrimmage.**—There should be no scrimmage inside of a week or ten days. It takes that much time to work the muscles into condition and to toughen the tendons and ligaments. If scrimmage is begun too soon there is danger of injuries that will be a handicap all through the season.

Switch the players about early in the season, to find out what position they can fill the best, but as soon as you discover this keep together regularly those you intend to use in games, so they may accustom themselves to each other's style of play.

Put the three best men at Tackle and Center, unless you use the Guards to run interference. In that case the best men should be at guard.

*Daily Schedule**First Day—*

*Line.*—How to make holes, how to block, and how to break through. Then drill in these plays.

*Ends.*—How to box a Tackle and how to put him out. Side drill.

Sprints for both line and Ends.

Falling on the ball.

Turns at kicking off.

*Backs.*—How to punt and how to catch punts; position on offense, how to carry the ball; how to run with the ball; interference.

Practice signals twenty minutes to a half hour.

Instruction in forward passing and in catching passes.

Drill in falling on the ball.

*Line and Backs.*—Tackling a dummy and in diving across it, also take turns in running carrying the ball.

*Second Day—*

*Line.*—Form in opposing lines with fifteen minutes drill in making holes and breaking through, the Ends working with the line in boxing Tackles, etc.

Wind sprints and falling on the ball.

*Backs.*—Drill in punting and catching punts, receiving passes, dodging Quarter Back and Ends (who tag only) and straightarming. Quarter Back and Ends drop-kicking; Tackling, head in front—in an openfield tackle with a player running for the goal line.

*Line and Backs.*—Practice with the dummy; advancing under the kick-off; how to cover the field, signals.

*Line.*—Once around the field.

*Third Day—*

*Line and Ends.*—As before.

*Backs.*—Catching punts and getting off in one motion.

Ditto, working by twos and making interference.

Forward passing.

Dodging Quarter Back and Ends.

Falling on the ball.

Drop- and Place-kicking.

*All.*—Practice with the dummy; signals.

*Line.*—Around the field.

## *Fourth Day—*

*Line.*—Falling on the ball.

Sprints.

Practice with the dummy.

Following the ball.

Kick-off; Goal-kicking; Drop- and Place-kicking.

*Backs.*—Catching punts and running, one motion.

Forward passing.—How to block off Ends in running back punts (Ends how to avoid same). Practice with the dummy.

*All.*—Running back punts; Ends and line Tackling.

Signals.

*Line.*—Around the field.

Talk on the theory of defense.

## *Fifth Day.*

Line, Ends and Backs same as third day.

The best way to put Ends out.

*All.*—Advancing under punts (against four men), showing Ends and line how to cover the field.

Signals.

Running back kick-off against opponents.

Running down the field under kick-off against opponents.

*Line.*—Around the field.

## *Sixth Day—*

Line and Backs fifteen minutes as on previous day.

Backs and Ends ten minutes making and breaking interference; line tackling dummy.

*All.*—Signals.

Running back punts; line and Ends tackling, running down the field under punts.

Defense against punts; when to block, when not to block.

Drop-kicking against opponents.

*Line.*—Around the field.

As the season progresses shorten the Line drill, but do some of it every second day for six weeks. Add more

sprints, going down the field under a kick-off and punts, and running back kick-off.

Give plenty of running and individual practice in kicking-off, goal-, place- and drop-kicking.

**Plays.**—Suit plays to the team. If the Backs are heavy and can keep their feet, use mass interference plays; if Backs are light and fast, play an open game with forward passes and runs from shift formations that mass the Backs on one side, in positions from which the fast runner can get away.

Do not build the offense around one man. Opponents will discover it and if he is injured your offense is ruined. Build an attack that depends upon team play for its strength and include some special plays for fast men. If they are injured you will still have an offense.

Do not use many plays. A few, thoroughly mastered, every man in the right place at the right time, and trained by frequent practice in exactly what to do. Each player learns by experience where he may expect to meet his opponent when interfering, and knows how to put him out. Each Back or End knows just how far he can go before the forward pass reaches him, how it is to come, and the way to handle it.

There is a limit to the number of plays a team can master, and beyond that number is a waste of time and effort. Few plays are used in a big game, seldom over a dozen, often less. Only the best plays succeed against a strong team and the Quarter Back will not even try the doubtful ones.

Select plays on the principle of a basal attack with strength, supplemented by a few special plays which, though risky, may bring large gains, and use two or three formations in each. Have something new to use in the last three games. Bear in mind that at the end of six weeks your style of attack will be established and cannot be changed. Therefore determine with care in advance

of the season what plays you intend to use, and have three or four that are reliable as the foundation of your system. Every year coaches are tempted to try many new plays, hoping to find one that wins. Plays that gain yards and yards against weak teams often fail miserably against a strong team and are worthless.

An attack is strong in proportion to how much it puzzles the defense and while the regular attack usually

E T G C G T E

Q

H F H

may be a part of your offense it should be supplemented by various Shifts and Formations. There are some plays in the regular attack which are too good to drop, being consistent ground gainers season after season. There is a powerful off-tackle play, a good cross buck, a strong split buck, and a fine forward pass. These, and others, are shown in diagrams that follow.

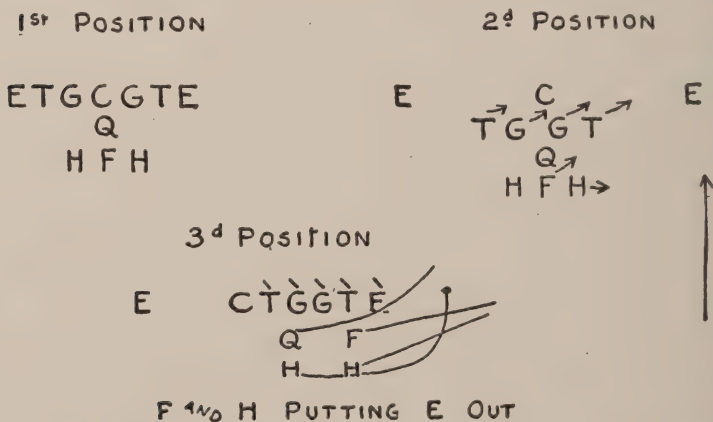
A team that uses Shift formations should have two or three plays to each formation, otherwise the defense will learn to know what is coming when the formation is taken. A team may have two or three formations, each with an attack on Center, a mass on Tackle, and a forward pass to shoot over the heads of the secondary defense when they edge in to stop line plunging. To these add punt formation plays and you have enough for any team.

The following are some good ground gaining plays used in recent years. No team should attempt to use all of these plays in any one season. They do not form a well balanced attack, and are not intended to do so. They have been selected from the offense of different teams, each of which used one or more of them to add variety to its attack. That is the way in which they should be used.

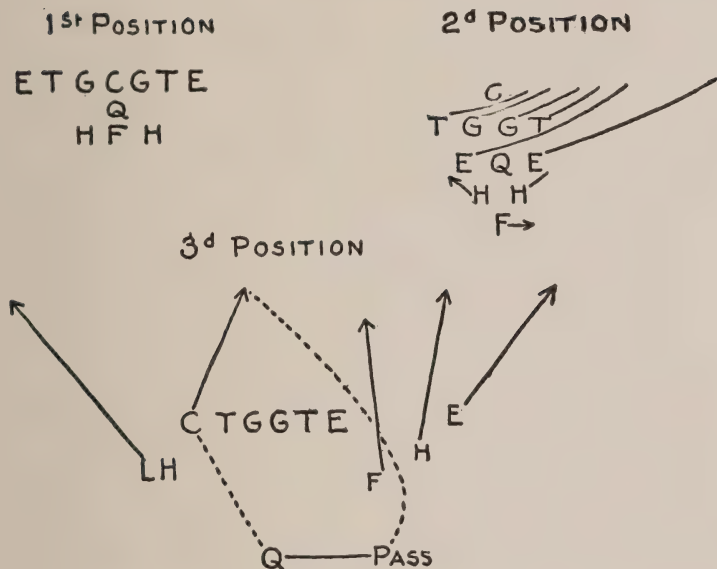
## CHAPTER XXVIII

### OFFENSE

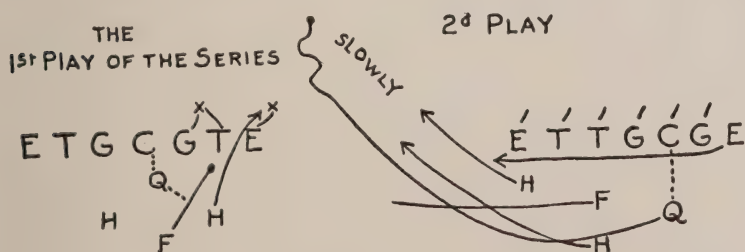
**Play Number 1. The Minnesota Shift.**—Guards and Tackles are withdrawn to a line behind Center, from which they can shift to either side just before the ball is snapped. This holds the defense in place until the shift has started, gives the offensive line a shorter run to the new position, and enables it to get the jump on its opponents. There are many variations of this Shift.



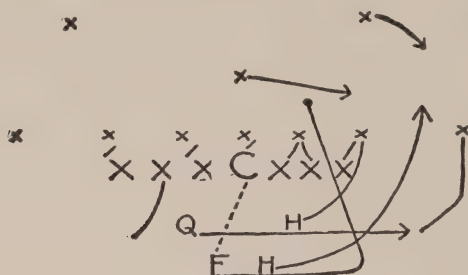
**Play Number 2.**—The Center or the Left Half Back are always free. The Center, being at the end of the line, is eligible to receive the pass. This is generally overlooked by the defense. If, however, the defensive Right Half Back did guard the Center, the Left Half Back was free.



**Play Number 3. A Series Play.**—The first play will usually gain only 2 or 3 yards, but it draws the secondary defense over to that end and the second play is made instantly, without a signal. In the second play the Full Back turns the End out and each lineman dives low on his inside opponent.

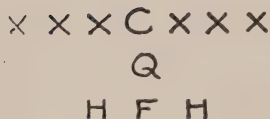


**Play Number 4. A Cut Back.**—The Quarter Back starts before the ball is snapped.

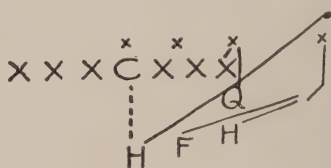


**Play Number 5. Shift of Backs.**—Ball snapped as Backs jump to second position.

1<sup>st</sup> POSITION



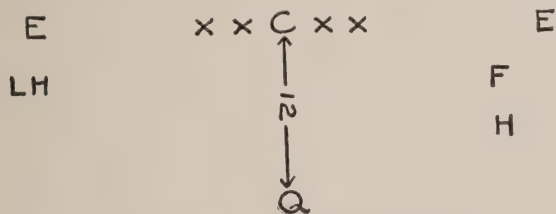
2<sup>d</sup> POSITION



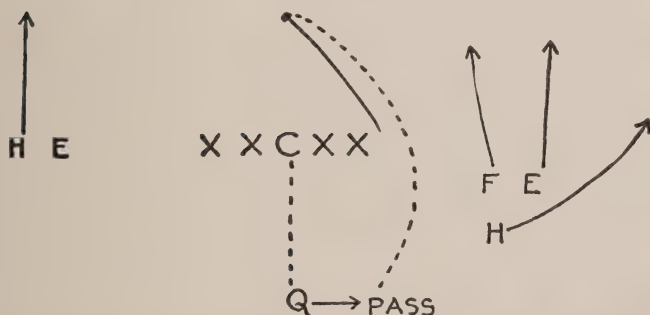
**Play Number 6.**—The Quarter Back runs slowly watching for an opening, but if none appears, he follows the Half and Full Back.



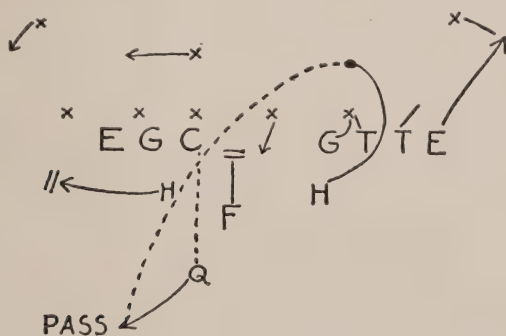
**Play Number 7.**—The Left Half Back jumps into the line. The Right End steps back, making the Tackle eligible to receive the pass.



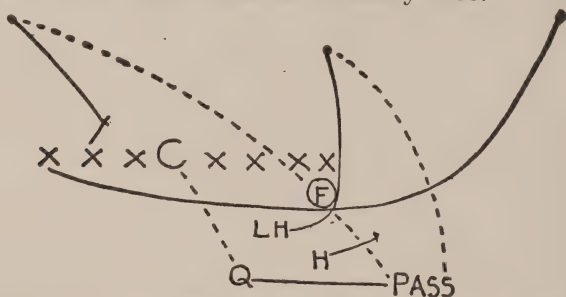
PLAY No. 7 2ND POSITION



**Play Number 8.**—The Full Back and Left Half Back protect the passer.



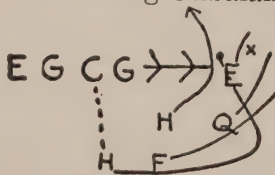
**Play Number 9.**—The Left End starts before the ball is snapped. The Full Back advances into the line and the ball is snapped as the End passes behind the Center. The Left Half Back goes down the field. The Left Tackle or Left Half Back are usually free.



**Play Number 10.**—The Left End charges the Tackle and then advances to receive the pass after the opposing Right Half Back has been drawn to the opposite side. The Quarter Back blocks the Right End after passing the ball.

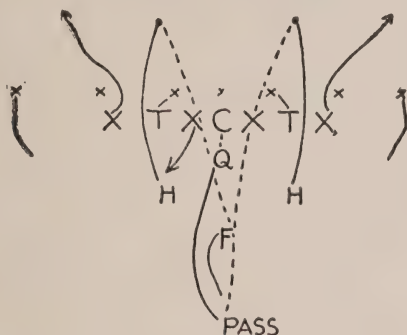


**Play Number 11.**—A Strong Unbalanced Line Play.



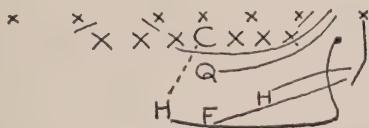
**Play Number 12.**—Tackles charge opposing Guards to the inside to make holes for the Backs. The Guards swing back to protect the pass.

PLAY No. 12



**Play Number 13.**

PLAY No. 13



**Play Number 14.**—Line buck with delayed pass. The Quarter Back turns as though to pass to the right, but continues his whirl and hands the ball to the Full Back. The Left Half Back stops the End if he comes on.

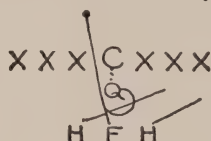
PLAY No. 14

**SPLIT LINE BUCK, WITH DELAYED PASS**



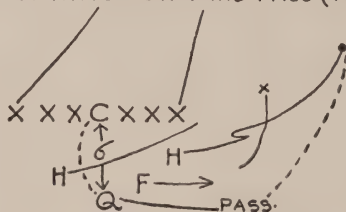
**Play Number 15. Cross Buck.**—The Quarter Back turns to the right as if to give the ball to the Left Half Back.

PLAY No. 15  
CROSS BUCK



**Play Number 16.**—The Quarter Back, Full Back and Right Half Back jump to the right. The Right Half Back runs as if to block the End, but sidesteps him and receives the pass over his head. The Left Half Back protects the passer.

PLAY No. 16 RUNNING FORWARD PASS (RUN or PASS)



**Three Powerful Plays.**—Mass on the Tackle with quick shift of the Backs.

1<sup>st</sup> POSITION

H H  
F Q  
E T G C G T E

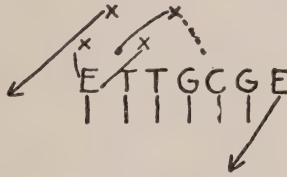
2<sup>d</sup> POSITION

H F H  
(2) Q (1)  
E T G C G T E  
E T G G T E  
x

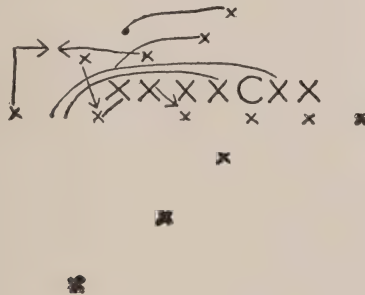
If the Tackle charges out, Back Number 1 and the End force him wide out and the play goes inside, with Back

Number 2 leading the runner, and blocking the man back of the line. If Tackle charges in, the play goes between the defensive Tackle and the End.

In an unbalanced line, with a shift of the Backs, the line charging forward shoulder to shoulder, low, the runner follows behind the mass and picks his way through the opening which results from the charge.



An unbalanced line with Wing Back, both Guards in the interference.



## CHAPTER XXIX

### DEFENSE

The defense shifts the Line and shifts the Backs, as occasion requires. Sometimes seven men are on the line of scrimmage, sometimes only five or six, depending upon the various offensive formations.

The attack may be made from a Regular Formation—an evenly balanced line and backfield; from an evenly balanced line behind which the Backs are massed to one side; from an evenly balanced line behind which the Backs, by one, two or three hops have taken unusual positions; from an unbalanced line, that is, one in which four, five, or even six men line up to one side of the Center, the Backs either massed or in a spread position; from a quick shift in which the Linemen draw back before the play and on signal rush to one side or the other of the Center; from split and spread formations which may extend half across the field, and in which the Backs as well as the Linemen may be in any unusual position.

The defense must be adapted to any of these conditions, the men being placed so that they can stop line plunges, end runs or forward passes. It is said that about ten years ago, when the lateral pass was brought from Canada, and was thought to have such a brilliant future in American football, that Harvard sometimes had only four men on the scrimmage line to meet the formations from which it was passed. Harvard met it successfully, too.

Hurling the Linemen through to smash the attack before it reaches the line of scrimmage—the first essential of a strong defense against straight football—will not

work at all against shift and spread formation forward passes. One or more Linemen must drop back.

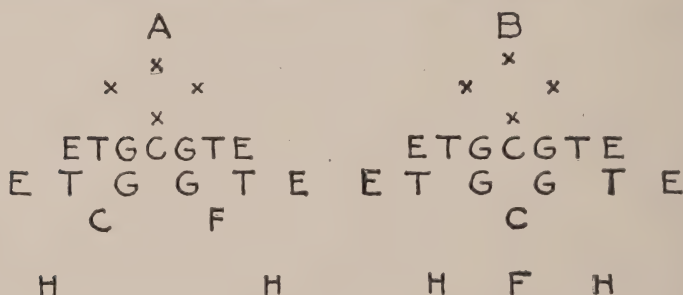
Begin with the following regular offensive formations:

H   F   H  
Q  
E T G C G T E

Against this evenly-balanced line and backfield, some coaches have seven men in the line of scrimmage, others only six. The seven man defense is considered the best against a team which makes line bucks. The six man defense is better against a fast team which makes end runs and forward passes. A good defense is a combination of the two, using the seven man defense inside the thirty yard lines, and the six man defense in the middle section of the field, where open play may be expected. This involves changing the style of defense during the course of the game, and it cannot be done successfully except by well drilled teams. The Center, who has been backing up the line, should jump into the line and give each Guard a shove, to indicate to them that they must move out. The position of the Tackles has little change, but they should be at least outside of the opposing Ends. The Guards will be playing opposite the opening between the opponents' Guard and Tackle should the attack be made behind an evenly balanced line, or between the two Tackles, if the offense has brought a Tackle over. When the Center goes into the line in this way, the Full Back, who has been with him in backing up the line, should shift his position so as to be opposite the opposing Backs, and must watch the Ball rather than the apparent place of attack. This means that instead of rushing to the apparent place of attack as soon as the play starts, he must wait to see whether the play is really going there or whether it is a cross buck.

In the six man defense the Guards usually play opposite a man instead of opposite the opening between two men, as above described, and will break through more readily by using the style of defense described under "How to play Center on Defense." It is always easier to get by one man than two. Shove your opponent sharply to one side the instant the ball is snapped, and throw your leg quickly through the gap thus made on the other side. Men who have not been able to get through at all in other ways, will astonish themselves by the number of times they break through when they master this play. Of course this move should vary by sometimes jerking the opponent to one side, sometimes leaving him alone altogether and striking the man who plays by his side, and sometimes by breaking through the opening.

In the Six Man Defense line-up as follows:



The difference is in the placing of the Center and of the backfield men. In diagram A the Center and Full Back play side by side, back of the gaps between the defensive Guard and Tackle. In diagram B the Center plays back of the gap between the defensive Guards, while the Full Back moves about, usually opposite the point where offensive Backs mass.

In diagram A the Center instantly meets a play directed, or apparently directed, against his side of the line, while the Full Back supports him, moving cau-

tiously, however, so that he will not be caught by a fake play followed by a cross buck. Should the play be directed against the Full Back's side of the line, he meets it, while the Center supports him. In diagram B, the Center instantly meets a play no matter where it may be directed or appear to be directed, the Full Back supporting him if necessary, but always on the alert for a cross buck. In this plan the Center and Full Back can change places if either is being fatigued by the play.

In the opinion of the writer the defense shown in diagram B is the stronger of the two, because in the other, one of the offensive Tackles, on whose side the play is not to be run, can rush through and block the Center or Full Back.

When the Six Man Defense first came into use the Guards and Tackles tried to hold off opponents, and meet the play on the line of scrimmage. This was found to be impossible against men of equal weight and experience, so that at present the Guards and Tackles try to break through at once, varying the direction of their charge according to the line-up of the offensive backfield. In the six man defense the Guards should break through on either side of their opponent, whichever in their judgment appears to be the best. They should guess where the play is likely to come, basing their guess upon the position of the offensive Backs, the number of downs, and the general type of play used by the opponents, and should break through inside sometimes, and then outside. If they break through always in the same direction an opponent will have little trouble in putting them out of the play after the game has been in progress for a short time. Often there may be some fault in the position of an opponent which will make it easier for the Guard to break through on one side than on the other. The feet may be too close together, or one may be too far back, etc. Usually it is easier to break through the side on which the front foot is placed. If opponent's right foot is for-

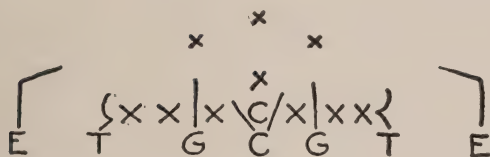
ward, driving the hands sharply to the right side of his head will twist his body to the left, and you can slip through to his right, whereas if you try to go through on the other side he may block you with his left knee. A Guard should always study the position of his opponent to discover any weakness of which he may take advantage. If his feet are too far back, too much weight will be on his hands, and you can easily grasp him by the head, jerk him forward and spring over him into the play. If, on the contrary, his feet are too far under him, thrust your hands stiff-armed, to his shoulders, and leap through. If his feet are too close together you can jerk him across to one side or the other and leap through the gap. Never break through in the same way twice in succession.

Study your opponent and take advantage of any weakness. Vary your play and try to deceive the opposing Quarter Back as well. Before he gives the signal, Guards and Tackles should occasionally take positions they do not intend to play, in order to tempt him to run plays through the place they will occupy when the play starts. When he has given the signal, they should move over into the place from which they intend to charge, and get set—if he has given the signal he will usually try to carry the play through, and they are then in a position to stop it.

Tackles should move out, or in, directly opposite the End. Guards move to the left or right, leaving an apparent opening. A Quarter Back usually looks for such openings, at least early in the game, before he has found them by play. This must not be done too frequently, however, or the Quarter Back will discover it.

When the opposing line shifts, the men backing up the defense should see to it that their linemen also shift promptly. If the linemen are set they may fail to notice the shift of the opposing line, and thus leave an opening for attack.

In the seven man defense the line-up is as indicated in the following diagram.



F

H

H

The Center plays directly opposite the Center and follows the directions given under "How to play Center."

Guards play opposite the opening between Guard and Tackle, low and in the same body position as on the offense except that their feet are a little more under them, with less weight on the hands and more on the feet. They should follow directions given under, "Guard Play."

Tackles play just outside of the Ends and charge on the snap of the ball.

The Ends are about 3 yards out. The Full Back about 3 yards back, with the Half Backs about 6 yards back.

The offense cannot run a play between their Guard and Tackle. It must attack either the Center, Tackle or End as both offensive Guard and Tackle are required to prevent the defensive Guard from breaking through. Each position is thus defended by men who have against them a single opponent, and who can use their hands. This makes the defense very difficult to penetrate.

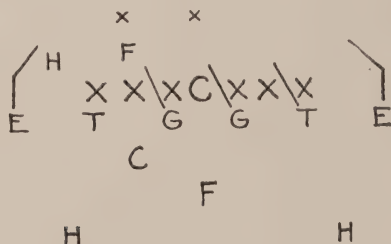
Guards do not vary their play unless certain they know where the ball is going, and are also sure they can push the Guard or Tackle aside, get through and stop the play. As long as they keep the offensive Guard and Tackle busy, even though they themselves may not get through often, they are strengthening the defense by delaying their opponents.

Tackles, by driving the End in, close the opening between the latter and his Tackle, thus preventing a suc-

cessful attack there. At the same time they are in position to swing out and stop an end play.

This defense is known as the "positional" defense, each position being automatically closed.

Although the tendency has swung again to the unbalanced line in offense, a great many teams still use the even line, three men on each side of the Center, but many teams mass the Backs to one side, either deliberately, as they take position, or by one, two, or three hops. The latter, if thoroughly mastered, is one of the most powerful systems of offense, having a terrific drive, and bewildering the defense. But it is difficult to master, and only partially mastered it is worse than useless. Against a Shift of Backs the linemen should, theoretically, move one-half a place towards the threatened side, but whether they should actually move or not depends upon how the Backs shift. In the Six Man Defense, the linemen can hardly venture to shift, no matter where the Backs mass. But although they may not shift, they can and should break through towards the Backs.



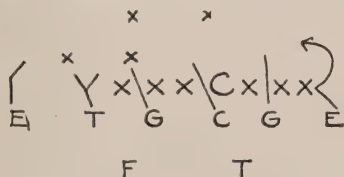
The danger spot is between the defensive Left Guard and Tackle, or outside of the latter. The offensive End has either the Full Back or Half Back to assist him on each play. The Tackle should lunge hard against the End, turning him in towards the Guard and at the same time be ready to straightarm the Back should he come through, and thus be in a position to break around out-

side if the play is directed there. The defensive Center can aid in closing the hole through the line and should the play go outside, he, with the End and Full Back, should be able to stop it.

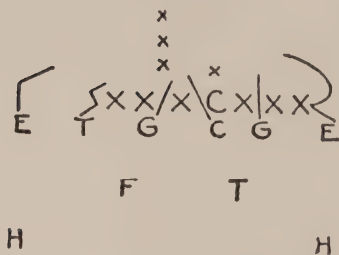


ILLUSTRATION 30. THE SIX MAN DEFENSE

In the Seven Man Defense, the Guard on the side opposite which the Backs are massed should, as a rule, shift a half place, the Center breaking through towards the mass, and the Tackle on the off side dropping back.

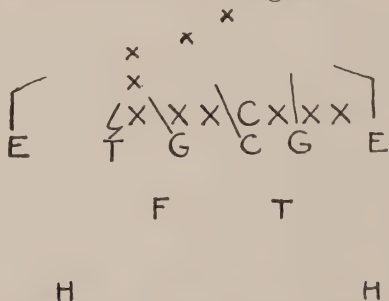


Even in a play like the following the Guard could afford to shift, for by breaking through towards the mass he would effectually block the opening.



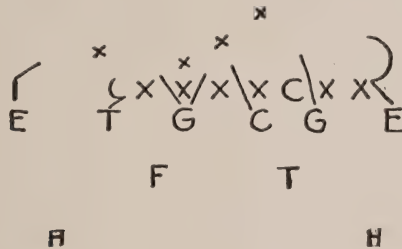
Under no circumstances should the Guard on the off side shift, for if he does, he leaves the offensive Tackle free to dash forward and put the defensive Tackle opposite him out of the play.

The following diagram illustrates a two-hop shift of Backs which may be used against teams which do not shift the Guard a half place on defense. The proper defense is that shown in the diagram.



The shift of Backs is often used with an unbalanced line. To meet an unbalanced line, one man over, each Lineman should shift one place. For example, if he has been playing against Guard he moves out and plays against Tackle, etc. This must be observed by both the six man and the seven man defense, whether the offense shifts its Backs or not. If the Backs are shifted behind an unbalanced line, the Guard on the threatened side in a seven man defense may even play a place and a half wide, lining up opposite the Tackle who has been brought

over, and sometimes breaking through inside of him, sometimes outside, the Tackle on the off side dropping back.

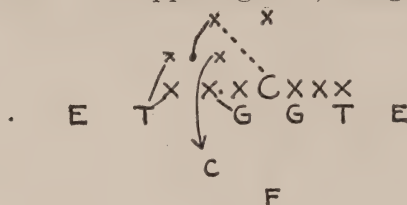


The Left Tackle charges the End, watching the Back outside of him, ready to jump aside as the latter advances, which he will do if the play is to go wide.

Tackles confronted with a Back on the outside, as in the diagram, may meet the situation by using one hand against the End, and with the other throw off the Back as he charges. A drive with one hand to the neck and the other to the body, bringing up the outside knee so as to block the on-coming Back, is also effective. One of the best ways is to drive both hands hard to the neck, at the same time charging with the inside foot, and instantly leaping back to avoid the Back as he rushes forward, and upset him. This closes an opening inside the End, and leaves the Tackle free to meet a play outside.

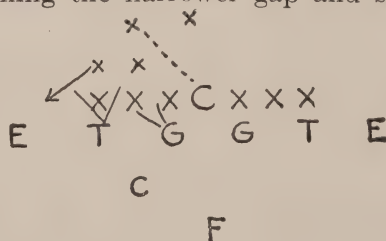
In the Six Man Defense Guards and Tackles should be placed at equal distances apart and should each play directly opposite an opponent, unless the offense has put out a wing Back as shown in the preceding diagrams. It is not practical to have Tackles play outside of Ends under any other condition. The space between them and the Guards is too wide and they have difficulty in stopping an off-tackle drive through it.

The opposing Guard and Tackle are in position to turn the Guard in. The opposing End, being on the inside of



the Tackle, has a better chance of turning him out and can be helped by the Half Back if the defensive End gets in too late to stop the play. The opposing Full Back gets a good open drive at the defensive Center, allowing the Half Back to slip through.

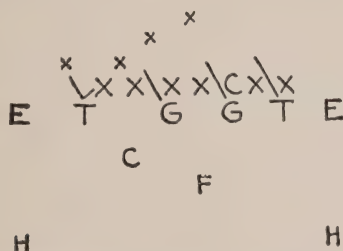
If the Tackle plays opposite the End, the opposing Tackle cannot get a side charge at him without leaving an opening through which the Guard can pass and stop the play so he must help keep the defensive Guard out of the play. This leaves the defensive Tackle, free to use his hands, against an End who stands directly opposite, but he also has the job of turning the Tackle out. The Half Backs behind the End cannot run effectively without blocking the narrower gap and slowing up the play.



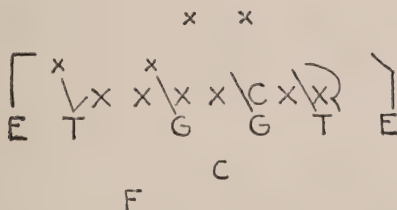
When opponents put a wing Back outside of the Tackle, as in the following diagram, the latter must move out until his inside foot is opposite the outside foot of the

End. Otherwise the Back has a direct drive at his side and can shove him in front of the End, the two together pinning him in while the play goes around. Suggestions for meeting this attack are given on a preceding page.

Six Man Defense against a one-jump shift of Backs behind an unbalanced line:



Defense against a two-jump shift, which throws the Backs wider:

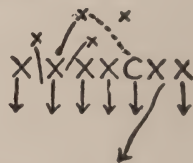


While it is a fundamental principle of defense to use the arms in breaking through, there is one style of attack which the Guards at least cannot stop in that way. It is an attack which Harvard is said to have used for many years, and which has been used during the past few seasons by several teams. In this attack the line, instead of carrying the opponents to one side or the other, thus making an opening, charges straight forward, shoulder to shoulder, and carries the entire defensive line back. In this charge the offensive linemen do not stand up at all as they attack, but charge parallel with the ground, and push with short steps.

The defensive Guard who attempts to break through this charge by using his hands will be carried back unless he is much heavier and stronger than his opponents. There is only one way in which this charge can be met successfully, and that is by getting under it. The best way to get under is to lunge straight forward parallel with the ground, turning the body to one side, so that one shoulder is up and the other down, and strike with the point of the shoulder in the opening between two opponents. The defensive Guard must be as low as he can get. This charge will carry him through if against men of equal weight, and once through he must grab the first foot in sight and hang on to it. The foot may belong either to the runner or to an interferer, but in either case it will stop the play on the line of scrimmage.

The Guard who uses this charge cannot be carried back. Even though he may not get through he will stop the charge of the offensive linemen on the spot.

This type of offensive charge is used mainly in a mass attack, as shown in the following diagrams; a mass attack can be stopped only by getting under it.

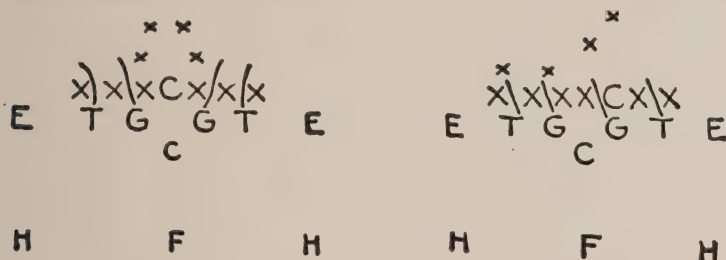


The Tackle against whom the mass is directed must also play low and must use his hands, charging straight forward, with extended arms, legs stretched out nearly straight behind, body low and almost parallel with the ground. He must brace himself and push, his object being to hold the mass in place while his own End stops the runner from behind, or the man backing up the line tackles him as he attempts to find a way through, or throws him back if he tries to roll over the mass.

It is impossible for the average Tackle to get through

three men massed against him in this way. The best he can hope to do is to hold the attack where he meets it.

The following diagrams show a variation of the six man defense.



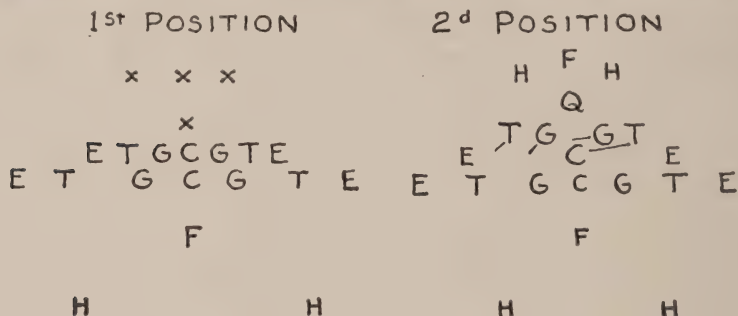
The object is to turn all plays to the center, where they will be met by the strongest defensive player on the team. This defense is rather weak because both the Tackles and Guards are poorly placed to meet their opponents in the line and the Full Back is too far away to support the man backing up the Center.

**Defense for the Minnesota Shift and Its Variations.**—It is customary to meet a shift of the line by a shift of the defensive line, the men jumping one or more places to the left or right, as the case may be. The weakness of this defense lies in the fact that, knowing to which side of the center they will rush, while the defense does not have this knowledge, the offensive linemen, if drawn back in some modification of the Minnesota Shift, can rush into place and be set before the defensive linemen can do so, thus catching the latter off their balance and getting a better charge.

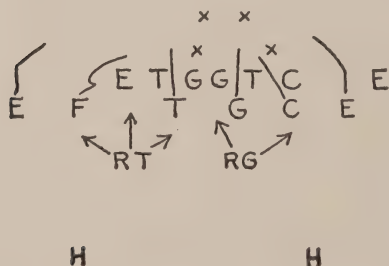
To overcome this weakness the Full Back can move into the line outside of the Tackle who has shifted over, and the Tackle opposite the short side of opponents' line moves back into the Full Back's position.

Full Back is usually a heavy man, capable of breaking interference, and should be instructed to charge on the snap of the ball and smash the line, if he cannot get

the runner. With a Tackle backing up the line there was the advantage of a heavy, powerful man in the secondary defense, an advantage which all coaches recognize. The Full Back often stops the runner, and when he fails to do so, stops the offense. This play used for the first time against the University of Chicago's shift formations, pre-



### 3<sup>d</sup> POSITION AND DEFENCE



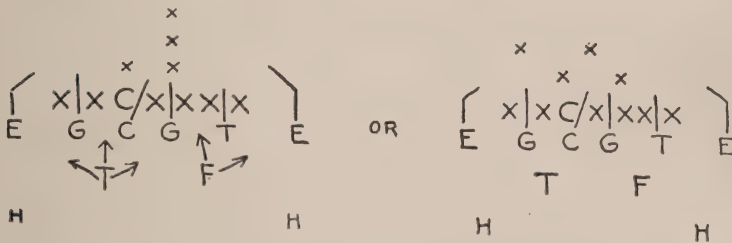
vented their crossing the goal line, which no other team in the Big Ten Conference succeeded in doing in the 1912 season.

The strength of this defense lies in the fact that it not only matches the offensive power of the shift by equal strength in the lines, man for man, on the threatened side, but that it gets the defense set as quickly as the offense. The Full Back can actually get into the line and

be set before the Tackle who shifts over is in place. The Full Back, appearing unexpectedly in the line, is an extra man whom the offense is not prepared to eliminate and in the brief delay as the game progresses, cannot provide opposition for his charge.

When the offensive linemen draw back, as shown in the second position, preparatory to shifting, the defensive Center, Guards, and Tackles stand up, and watch, ready to get set where they stand, or to jump back into the secondary defense the instant the offensive line starts to shift. If the latter starts to its right, the defensive Center, Left Guard, and Tackle get set in place, exactly where they are standing, the Left End moves out, the Full Back rushes into the line, while Right Tackle, or Right Guard and Tackle drop back and vice versa if the offense shifts to the left.

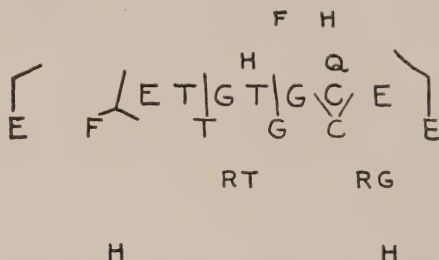
Against a shift of but one man, the Backs placed so they can attack the short side of the line also, the defensive Full Back does not go into the line but takes a position from which he can charge in either direction as the play advances.



There are many variations of the Minnesota Shift but this defense will stop any of them. If you expect to meet teams using any of these variations you can well afford to perfect the defense for them.

If both Guard and Tackle shift on the offense, the defensive Guard and Tackle on the short side drop back

as shown in the following diagram, the other linemen charging through.

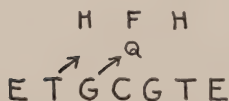


The secondary defense is massed opposite the probable point of attack.

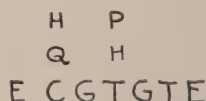
The offensive Backs are here lined up in a position that is suitable for bucks, end, or tackle runs, and even forward passes, and they can strike either side of the line. Should they shift to positions from which they cannot possibly make a line-buck, positions which lead only to a forward pass, the linemen who drop back must each select a Back and guard him.

This defense works successfully against a team which makes a quick shift of the line by bringing the men over on the run instead of drawing them back.

#### 1<sup>st</sup> POSITION

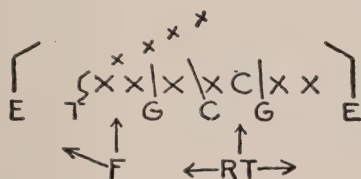


#### 2<sup>d</sup> POSITION



Some coaches believe that plays from an unbalanced line can be run more successfully by bringing the men over deliberately, allowing the defense to place itself, and making the play after the offense has noted their position. Against a team which does this, which gives the defense time to line up against it, the defensive linemen should shift right or left, instead of the Full Back coming up, be-

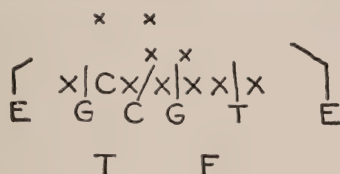
cause the linemen are accustomed to line work and should be able to do it better than the Full Back. When this defense is followed, the Tackle on the short side, the one whose opponent has left him, is practically useless in the line. He can get through, but not in time to stop a play unless directed against the short side of the line, which is seldom the case. Therefore he should drop back, as shown in the diagram, in which position he will be of help in stopping a line buck, and can also readily reach a play to the short side.



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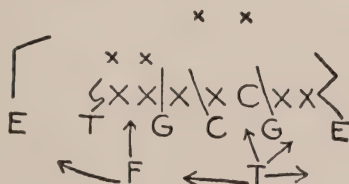
If the offense brings two men over, defend as follows.



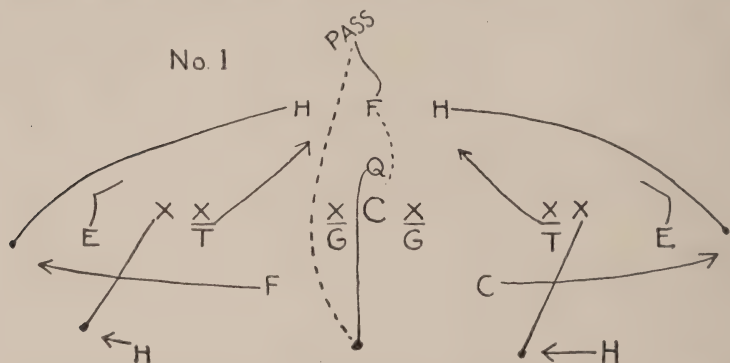
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Another unbalanced line formation. The defense to it is shown in the diagram.

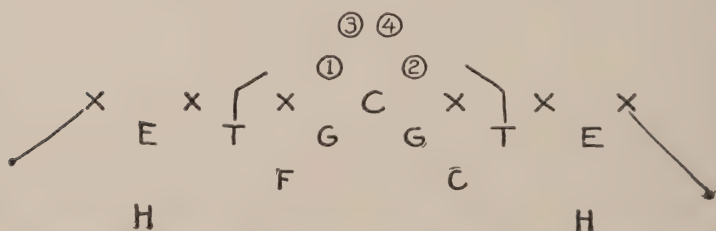


**Defense for Split Plays.**—The Quarter Back is the dangerous man, hence Guards hold off their Guard, watching the Quarter Back and stopping him as he comes through, or covering him. Tackles hurry the passer. The Quarter Back is free if Guards do not stop him.



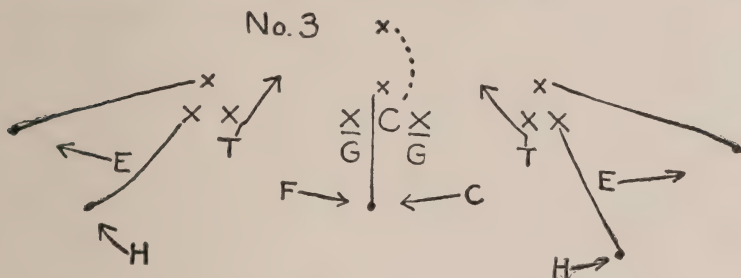
The Guards wait. Tackles hurry the passer. Ends watch developments.

### No. 2 (LINEMEN 5 YDS. APART)

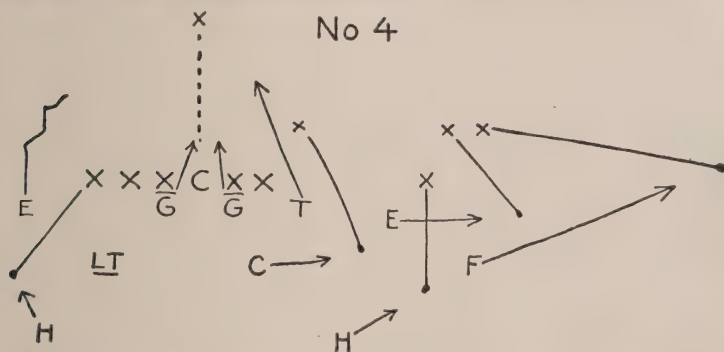


Formation No. 3 introduces a new element into the offense, namely, the Half Backs so wide that the secondary defense cannot cover them. An end run is practically impossible, hence the Ends are freed from responsibility for it. Therefore they guard the Back nearest, while the Tackles stop any attempted end run, and the Full Back and Center guard the Quarter Back and

prevent his attempt to come through the line. The Guards break through and hurry the pass.



Observe the difference in the play of the defense as compared with that against No. 1. It is caused by the difference in the line-up of the two Backs on offense. In No. 1 they are placed where they can be guarded by the Full Back and Center. In No. 3 they are not so placed. An end run is possible from No. 1 but not from No. 3.

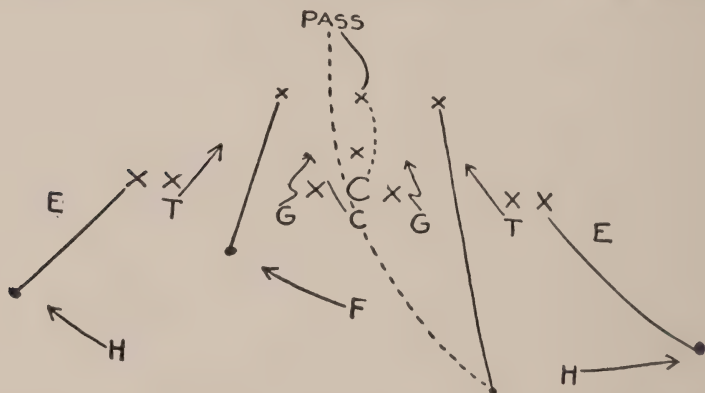


Observe that it is impossible to buck the line from this formation, so the Center retreats and guards the Back nearest to him; the defensive Full Back places himself opposite the shifted Backs, and guards the outside Back; and this is another play in which the End, freed from the responsibility of guarding an end run—since it cannot be made from this formation—guards the nearest Back.

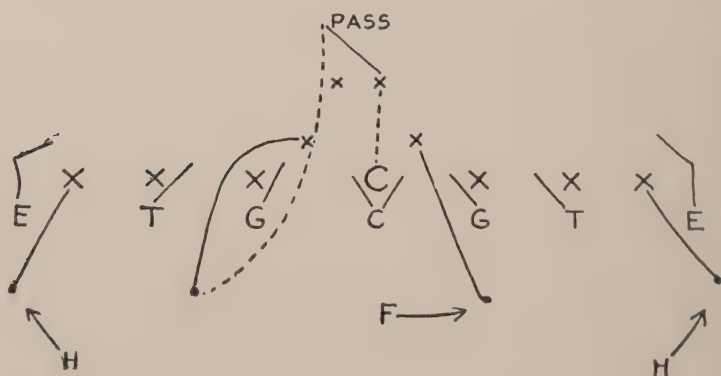
These varieties of Split and Spread plays are shown to illustrate certain principles of a good defense.

For example, if the formation is one from which opponents cannot make a line buck the Center drops back and guards the nearest Back.

If the formation is one from which an end run cannot be made, the Ends drop back and guard the nearest Back.



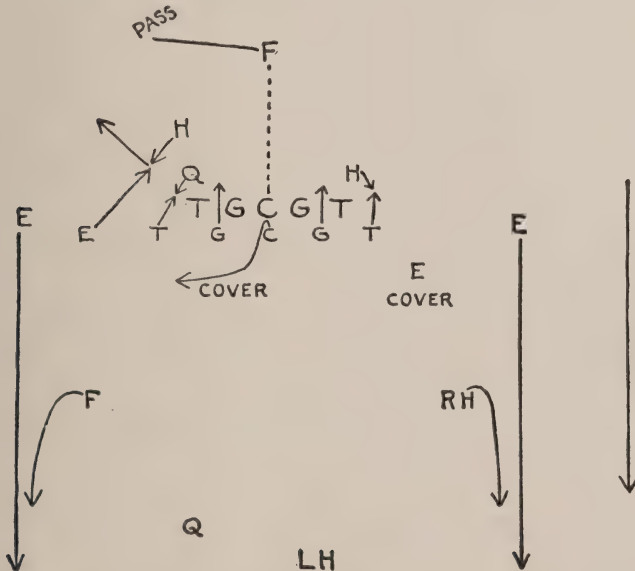
If the formation is one from which a line buck, a run or forward pass can be made, at least one lineman must



drop back to cover a forward pass. If he does not the play will make a gain, because the Full Back has the task of guarding two men. (Diagram page 180.)

Similarly, play No. 2, if defended in this way, could not be stopped.

A safe principle to follow against unusual formations, against split formations in general, and against formations which send the Ends far out, and the Backs to one side, is to move back one or more linemen to guard whatever the play may be or a charge by two linemen to hurry the pass (either Guard or Tackle, according to the formation) while the other two hold off opponents with their hands, and are ready to meet the play.



Defense to punt and forward passing formations. See page 140.

## BASEBALL

### CHAPTER XXX

#### FUNDAMENTALS

The one great fundamental which must be observed by every man on a ball team is complete relaxation.

Discuss this subject with players at every opportunity and teach them in such a way as to encourage them to feel at ease at all times. Do this not by driving or nagging, but by encouraging and going slowly. They must be cool, confident, and collected, and ought to be reassured by the presence of their coach and pleased by his companionship.

**Ground Balls.**—Strive for form first and do not expect players to get ideal form in less than two or three weeks. It is much better to start fielding ground balls on a board floor rather than on one of dirt, when practicing indoors, because the ball bounds truly and is much easier to handle. Such conditions are the best under which a player may practice to gain or retain confidence in his own ability. An indoor dirt floor is dusty, difficult to keep in condition, and usually rough, causing balls to bound badly and the fielders to fear the bounds. These conditions tend to destroy the confidence of players rather than build it up.

Every player on a ball team must field ground balls and it is necessary that they should know how to do it well.

**Position of the Feet.**—The easiest way to field is the best. Eliminate all extra motions. A very common fault is putting the left foot ahead of the right in order to



ILLUSTRATION 31. POSITION OF THE FEET

The left foot is too far forward and the position of the body is not good

throw the ball quicker. The first aim is to get the ball and then to throw it. With some underhanded throwers and under some conditions, this position is advisable. (Illustration 31.)

When ready to start for a ball stand with your feet about eighteen inches apart, face the batter squarely and lean toward the batter enough, as the ball is pitched, to



ILLUSTRATION 32. POSITION OF THE HANDS

Observe the good position of the body, knees and hips in relation to the hands

raise your heels from the ground and get up on your toes.

When you have advanced to meet the ball, try to stop at a point where you can field it on a good bound—i.e.,

on a long bound or a pickup. When you stop, place heels together or not more than two inches apart and point toes outward so the feet form an angle of 90 degrees. The stop is for an instant only. Your momentum will carry you into a throwing position after fielding the ball.

**Position of the Hands.**—The hands should be close to the body or feet. Permit the ball to carry them back. Do not push them forward.

The fingers should always be straight up or straight down. If the fingers are down, the two little fingers should be touching; if the fingers are up, the two thumbs should be together. The hands must be nearly flat and not cupped. (Illustration 32.)

**Position of the Body.**—The body should be bent in order to be low. You should take this position because it is easier to bring the hands up for a bad bound than it is to get the body down if you are standing up. The bend should be half in the knees and half in the hips or trunk. (Illustration 32.)

The knees are turned out and not in. As the bend is made, raise the heels a little in order to rest on the balls of the feet.

**Handling the Ball.**—After the ball is hit get in front of it as quickly as possible. If the ball is hit extremely hard, permitting no time to advance, run straight across to get in front of it. On a moderately hit ball get in front of it as you advance. On a slowly hit ball advance at an angle that is still greater. If the ball is very slowly hit, hurry in after it, throwing the body to the left side, and field the ball with the right hand. It is necessary to play fast to retire the runner, so you can take a greater chance on fumbling the ball. When it is legitimate to handle a ball with one hand, do so.

Always stop just before you catch the ball, except on a very slow hit. The best place to catch a grounder is on the pickup as it leaves the ground. At the height

of the bound is the next best place and often the best.

**Watching the Ball.**—Watch the ball from the time it leaves the bat until you have it in your hands. All the things you know about fielding ground balls will be of no use if you do not watch the ball.

**Fumbles.**—If a ball is fumbled, do not stop, but go right after it. Pick it up with the right hand, as you throw your body to the left of it.

When players have mastered the above fundamentals in fielding ground balls, they may field with their feet farther apart, that is, more with their hands alone, because they will assume the above form on all hard hit and bad bounding balls.

**How to Throw.**—Throwers should not be permitted to use their own judgment entirely in throwing. If left to themselves players will “throw their arms off” and get injuries which will make them inferior ball players. To prevent throwing too much and too hard, they must be cautioned at every opportunity. They should never begin throwing hard without first warming up the arm, by several minutes of easy practice. It is a good plan to start by throwing about fifteen or eighteen feet and move farther apart as the arm warms up.

**Throwing.**—Grasp the ball with the first two fingers and the thumb. Nine-tenths of the throws are made overhanded. Unless necessary, never use the side arm or underhanded throw, which are not as true as the overhand throw. (Some men have had their arms injured and cannot throw overhanded.) Every man should know how to throw underhanded, because it is necessary in some cases, as will be taken up in the play of the different positions.

There are two types of overhand throws. The snap throw brings the ball back as far as the ear, throwing it with a snap of the arm, and following through with the arm and the body.

The full arm throw starts the ball back of the body,

making a full arm swing. Do not form an acute angle with the forearm and the upper arm, as this causes the

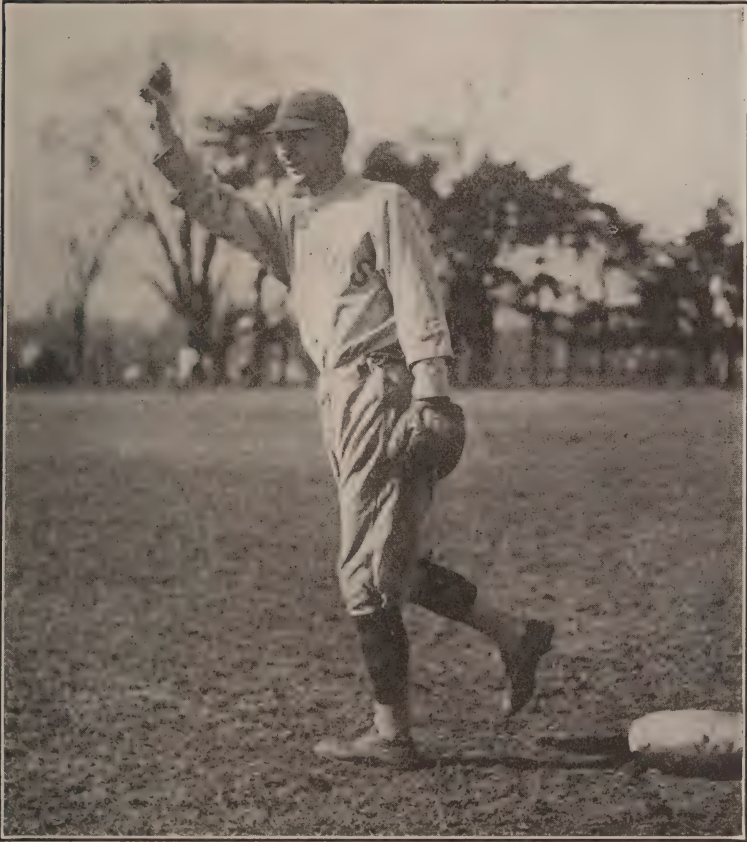


ILLUSTRATION 33. OVERHAND THROW USED BY INFELDERS

Notice that the fingers are on top of the ball when it is released

arm to cramp and tends to make the throw go wild. Keep the arm nearly straight.

The overhand throw may vary with players and positions between a snap throw and a full arm throw, according to the distance and the quickness or speed with which it must be made. This throw is known as the infielder's or short arm throw and is commonly used by infielders.

**Releasing the Ball.**—Have the two forefingers on top of the ball. This position tends to keep the ball up and to make it go in a straight line.

Do not release the ball until the arm is out full length and then be sure to follow it through if possible (Illustration 33), with the arm, body, and the right leg. One of the faults in throwing is that the wrists rotate so that the ball comes out over the index finger. This is natural, but one of the things you must correct, because it tends to curve the ball and so makes it harder to catch and loses its carrying power.

**The Underhand Throw.**—The underhand throw is often used to handle a bunt. It is not as good as the overhand throw, but must be used to get a fast base runner or to save time on some plays. It is made with a swing of the arm without straightening up. It is often used by the first thrower on a double play (Shortstop to Second to First). Be sure that you do not straighten up, because if you do, you lose the time for which you make the underhanded throw. If you are very close you should take a step and pitch or float the ball to the baseman. The outfielders should never throw in any way but overhanded.

When picking up ground balls jump into position as you straighten up, or step into position as you bring the ball back to throw. One is as good as the other. The jump into position is a little faster, but at the same time is a little harder to do.

Insist on throwing the same in the practice as in games, because, if not, the result will be bad throwing.

Infielders and Catchers usually use a short arm or snap

throw, while outfielders and pitchers use a long arm throw.

**Sore Arms.**—Always dress warmly and protect your arm, as the cold weather is bad for it. Never take a player's word as to whether or not his arm is sore. Watch him throw and decide for yourself.

An extra sleeve should be worn in very cold weather and when sleeping, as heat is one of the best medicines for preventing sore arms. It will also help to heal the arm if it does get sore.

**After the Arm Gets Sore.**—The best cure is rest and heat. A liberal application of hot towels is a good way to get the heat. If the pitcher has a sore arm on the day of the game, it may be advisable to use some good hot liniment, but use liniment sparingly unless the arm is sore and a game is to be pitched that day. In case you do use liniment too much, you may get what is commonly known as a "liniment arm," which requires the use of liniment at all times, and indicates that the arm will never be as good as it was before. What we call acute soreness can be helped and cured.

The glass arm is one that is permanently lame. The cure for the glass arm is to prevent it.

If the biceps ligament slips out of the biceps groove, go to some good doctor and have him put it back. If you are suddenly unable to raise the arm to throw overhanded, the chances are that some ligament has slipped.

## CHAPTER XXXI

### BATTING

The most important fundamentals in batting are listed below.

**Watching the Ball.**—It is just as important to watch the ball in batting as it is in fielding ground balls. This is the greatest of all the fundamentals in batting.

**Hit Only at Good Ones.**—You must remember to hit only at good ones, but you should not worry about letting a good ball go by once in a while. If you expect to hit only at good balls in the game, it is necessary to do so in practice.

**Do Not Swing Too Hard.**—We do not mean by a moderate stroke to take only a half-hearted one. Take a firm stroke, but don't try to use your entire strength.

**The Position at the Plate.**—The batter should be about one foot from the base and just opposite it. If he grasps the bat well toward the middle, chokes it, he may stand as close as six inches.

**Times to Vary the Position.**—When the pitcher uses a fast ball without much curve, the batter should be in the rear of the batter's box.

Against a slow curve ball, the batter should be as close to the pitcher as he can get and be able to hit the ball before it gets its maximum curve.

**Position of the Feet.**—The feet may be spread or together. The first position may be good for some and the second for others, however, a greater number bat from the second position. It is a good plan to try both ways in order to decide which you like better. (Illustration 34.)

The batter should be relaxed, standing with his weight on both feet. As he makes the strike the weight is shifted to the left foot if he is a right-hand batter.



ILLUSTRATION 34. BATTER AT THE PLATE

Notice the position of the feet. A step is not necessary in swinging at the ball

**The Stride or Step.**—The stride should not be long, but the batter should make a short step toward the pitcher. The stride will vary for different batters from six inches to a foot. The left foot should step directly toward the

pitcher if a right-hand batter, the right foot if a left-hand batter.

**Faults in the Stride.**—The batter may step away from

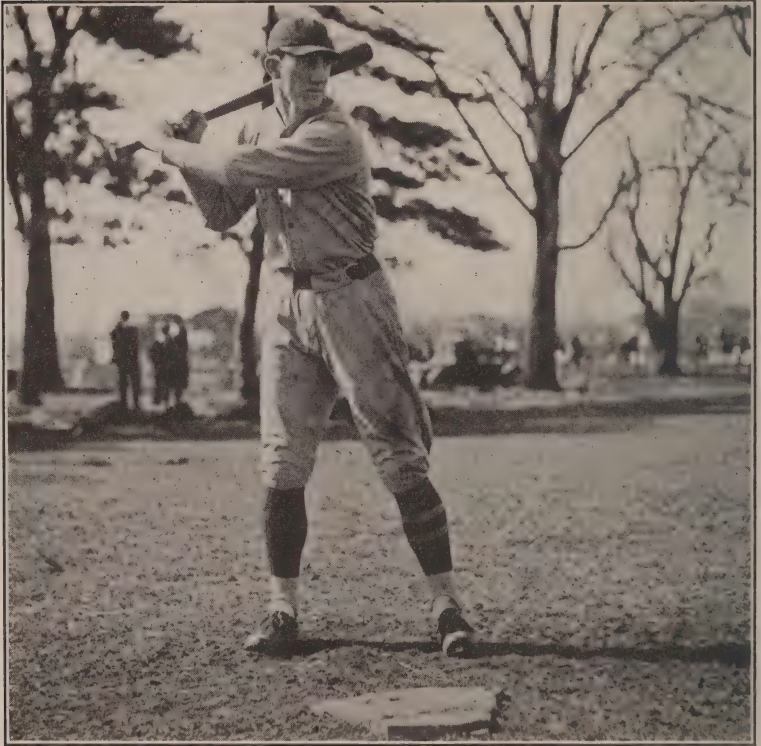


ILLUSTRATION 35. THE SWING OF THE BAT

Correct position of the bat before the batter makes his swing

the plate. This fault must be watched because if the opposing pitcher is alert he can keep the ball to the outside of the plate, and the batter will be unable to hit well. One way to break this habit is to impress upon the

player the importance of his breaking the habit himself, and if he succeeds, he will be a much improved batter.

Another good plan is to stand up at the plate when the Pitcher is warming up and just watch the ball go by, doing everything but swing. This is also a great help to the Pitcher. You must be very careful that at the same time you are breaking this habit you are not getting into a worse one, i.e., hitting "off your heels." If you find that when you do not step away from the plate you hit "off your heels," continue hitting by stepping away. Some men become very good hitters even though they step away from the plate.

**The Swing of the Bat.**—The hands may be together and four or five inches from the end of the bat. This distance may vary for different men, or the hands may be held apart. For some this is a better way.

Never take a tight grip on the bat. If you think you are doing this you may tell by the fact that the knuckles get white.

Just before the swing the bat should be over the right shoulder (over the left shoulder if a left-hand batter). (Illustration 35.) This is necessary because the swing must be started high. After the batter has formed the habit of starting the swing high, it is all right to hold the bat in any comfortable position, providing the swing starts from above the shoulder. If started high, the hit is more likely to be a line drive or a ground ball. If the swing is started too low, the tendency will be to hit under the ball or to hit flies.

As the Pitcher starts his wind-up the bat is raised off the shoulder and as the swing is made, the batter's weight is shifted from the right to the left foot, or vice versa for a left-hand batter. The shift is made in order to get more weight behind the swing at the ball. The way to make the shift and to get your weight behind the swing is to meet the ball in front of the plate. The swing should be as nearly parallel to the ground as it is

possible to make it. If the ball is low, the bat should travel on the arc of a circle. Have the idea that you are going to drive the bat through the ball and give a good full arm follow through. The back shoulder should not be dropped, but carried forward in the same straight line. Dropping the shoulder is a common fault among men who take too long a stride.

The bat should be a continuation of the arms, i.e., the arms should be held out straight and not bent too much. Seldom allow yourself to crouch at the plate. Stand up.

You should guard against moving the bat about too much when at the plate because a good pitcher will pitch the ball when you are not ready to strike.

**The Selection of the Bat.**—Most ball players make the mistake of using a bat that is too heavy. Pick out one you can handle.

**The Hitting Slump.**—Sometimes the hitting slump is caused from the loss of confidence. This may sometimes be cured by a change of bat. Use a lighter or heavier one as the case may require.

**Batting Practice.**—You should do about four times as much batting as you do fielding. The best kind of a pitcher to use in practice is one with about the same grade of pitching you expect to meet in the games which you have to play. Never bat against a pitcher who is too good. It will destroy your confidence. Never have a pitcher who throws many wild balls, because it will get the men in the habit of hitting at bad balls.

## CHAPTER XXXII

### BUNTING

The purpose of bunting is two-fold: first, bunt for a sacrifice, and second, bunt for a base hit.

**Bunting for a Sacrifice Hit.**—Take the same position at the plate as you would to hit, but you should be in the position to bunt before the ball reaches you and the bat should be held well out in front and toward the pitcher. You should also take a stride before you bunt.

Both hands should be about the middle of the bat, and held loosely (Illustration 36), or the lower hand in the original position and the other hand out about the middle of the bat. (Illustration 37.) Some men can bunt very well by not changing the hands from the hitting position. However, in most cases it is well to start as in Illustrations 36 and 37. To reverse the bat is not a good practice.

**Bunt for a Base Hit.**—The batter must disguise his intentions as long as possible.

The batter starts to run at the same time he hits the ball and in the sacrifice he waits until he is sure he has bunted the ball. Otherwise this bunt is the same as for the sacrifice bunt.

**Drag Bunt.**—This is used by fast left-hand batters. The bunt should be made hard enough so that the Pitcher cannot field it, i.e., so that the ball stops just about on the base line if there is nobody to stop it. The batter should start just at the time he hits the ball or even a little before he hits the ball.

**Summary of Fundamentals in Bunting.**—Bunt only at good balls, except on the squeeze play. The reason for bunting only at good balls is that the runner does not start until the ball is bunted.

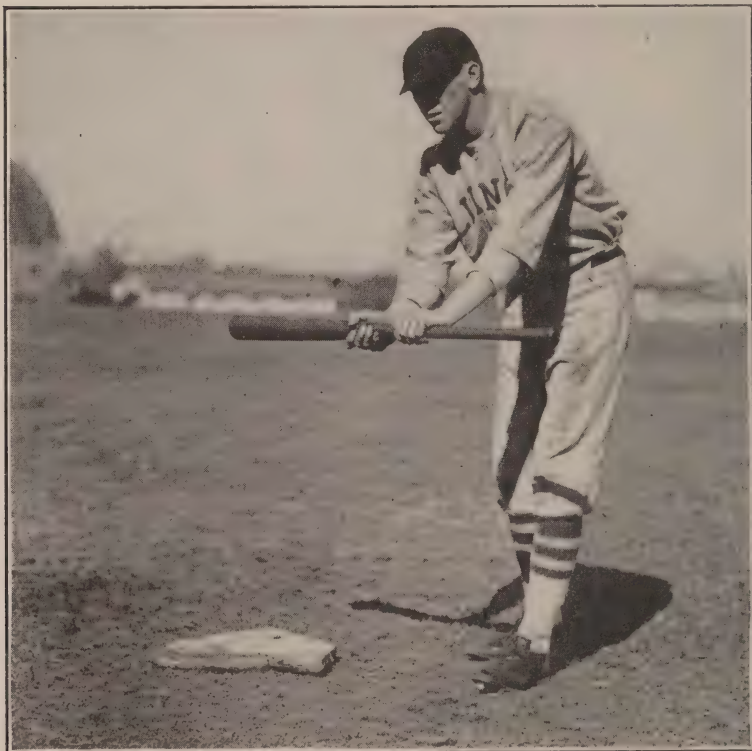


ILLUSTRATION 36. POSITION OF THE HANDS IN BUNTING

Observe that the right hand is nearly around the bat

Do not try to run until you hit the ball.

Be sure that you get in position soon enough and don't push the ball when you bunt it. Let the bat give with the ball when it is hit.

Attempt to place a bunted ball close to the foul lines on the ground. If wanted down the first base line, the bat should be held almost at right angles to the first base



ILLUSTRATION 37. POSITION OF THE HANDS IN BUNTING

Position for bunting when one hand in the original position and the other about the middle of the bat as if trying to catch the ball on the bat

line. (Illustration 36 or 37). If wanted down the third base line, the bat should be held almost at right angles to the third base line. (Illustration 38.)

There are advantages in bunting with a large bat.  
The bat should be held, as nearly as possible, parallel to the ground.

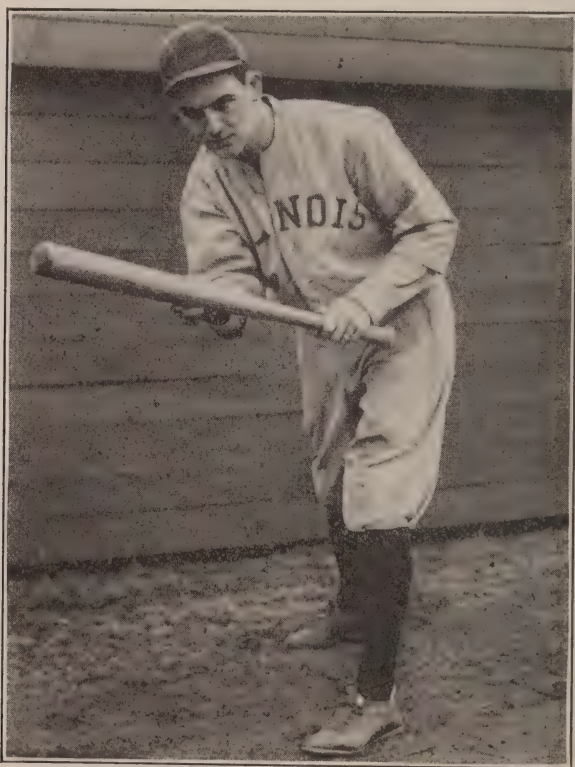


ILLUSTRATION 38. POSITION OF THE BAT IN BUNTING

Notice that it is at *about right angles* to the third base line for a bunt in that direction. Angle of the bat when the batter wishes to bunt the ball down the third base line

Bunting should be practiced every day in the week during the season. Hit two and bunt one is a good practice system.

## CHAPTER XXXIII

### PLAY OF THE CATCHER

**Position.**—The Catcher stands on the balls of the feet with a bend in the hips, back and knees. He should be low, because it is easier to get up than it is to go down after a ball. Also there is less to obstruct his vision.

Always get in front of the ball by shifting the body. The Catcher should never stand still and depend upon his reach to catch the ball. One good reason for the shift is to get into a good position to throw the ball. If catchers practice the shift sufficiently it will soon become a habit with them. (Illustration 39.)

**Position of the Hands.**—The fingers should be straight up or straight down. This is the natural way to catch the ball and at the same time there is less danger of injuring the fingers. It is also very important that the Catcher remain relaxed, so that the weight of the ball will cause the hands to give. (Illustration 40.)

**Throwing.**—There are two kinds of throws, namely, the snap throw and the full arm throw.

Pick as catcher a man who is a good thrower.

If you have a Catcher who is a poor thrower, do not be afraid to take a man from the in or outfield, and make a Catcher of him. The Catcher is the most important man on the team, with the exception of the Pitcher.

He should be able to get the ball away quickly and with the least possible loss of time.

After he catches the ball he should take a step with the left foot and make his throw.

After the Catcher learns this he should be able to get himself into throwing position just before the ball reaches him.

In practice be sure that the Catcher throws the same distance that he must throw in the game.

Be sure that the free arm throwers do not get in the



ILLUSTRATION 39. POSITION OF THE CATCHER

Completion of the shift which the catcher makes when he is going to throw

habit of trying to throw the ball too fast; also, that they do not get the habit of not starting the throw back far enough so that they are pushing the ball out in front of them instead of throwing it.

**Position in Regard to the Batter.**—The Catcher should be as near to the batter as he can safely be. This gives



ILLUSTRATION 40. POSITION OF THE CATCHER'S HANDS

Having the fingers straight up or straight down when the ball is caught

the Pitcher a better mark at which to throw and it worries some batters. He will also be nearer the bases to which he must throw.

The umpire standing behind the Pitcher may be watch-

ing where the ball stops and not where it goes over the base, in which case there is a better chance of his calling balls favorably.

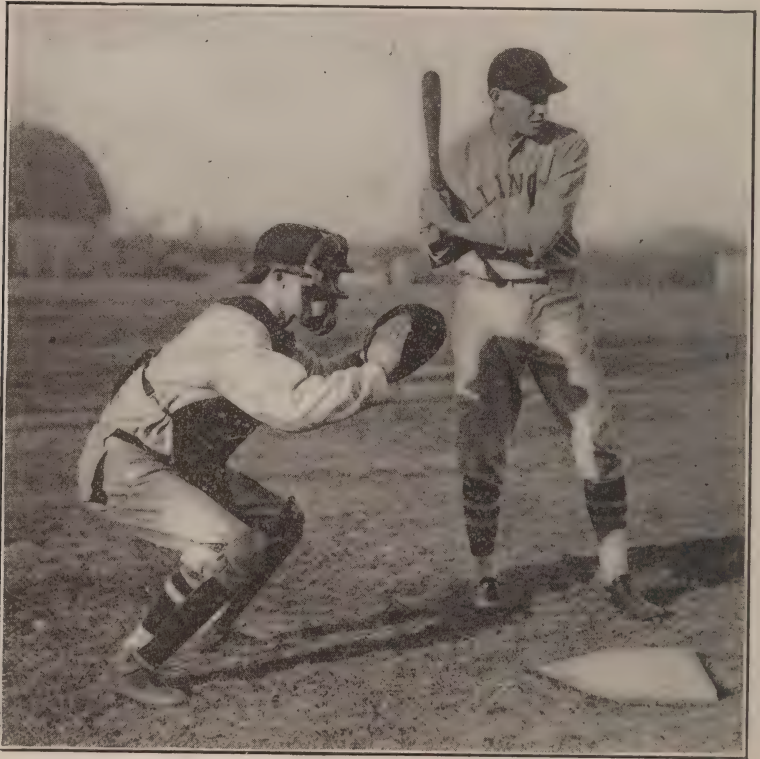


ILLUSTRATION 41. POSITION OF THE CATCHER AND BATTER  
Notice that the Catcher is just back enough to be out of the way  
of the bat

There is one exception to standing close to the batter. When the Catcher is going to throw to third base, he should get back far enough, so that the batter will not be in his way when he throws. The step of the left foot is

not to the front but to the side and to the rear. With left-handed batters this is unnecessary in throwing to third base but must be done in throwing to first.



ILLUSTRATION 42. POSITION OF THE CATCHER IN GIVING SIGNALS  
Observe that it is impossible for any one outside the diamond to see the fingers used in giving signal.

**Fly Balls.**—Practice catching fly balls every day. The first thing to do when the ball is hit foul over the Catcher's head, is to take off the mask and start running back. Do this until it becomes a natural movement.

The cut of the ball is always back toward the infield, therefore the Catcher should be careful not to run too far under the foul fly. If there is a strong wind to the Catcher's back, the cut will be still greater and, if to his face, the cut may almost be taken off entirely.

If the Catcher has time to get back and turn around, he should do so, keeping the ball over his head, so it looks as if it would hit him on the head.

**Working with the Pitcher.**—If giving the signals with his fingers, the Catcher should be sure to have his fingers back between his legs far enough to be hidden from the coaches on first and third and the men on the players' bench. This prevents their warning the batter as to what is to be pitched. (Illustration 42.)

Above all, the Catcher should be active and full of life. The Catcher faces all the other players and, if he has enthusiasm, the whole team is likely to follow his example.

The Catcher can help the Pitcher, when he is just a little wild, by telling him to start his curve or fast ball over further, a little higher or lower, etc. He should also watch for the weakness of the batters and tell the Pitcher what kind of ball they will be unable to hit well. If a batter hits a certain ball well, the Catcher should remember it and never give him a chance at the same kind again.

The Catcher should return the ball to the Pitcher properly, that is, so it can be handled without any extra effort. The Catcher should also see that the Pitcher does not work too fast. He can do this by holding the ball a short time after each pitch before returning it to the Pitcher.

The Catcher should never call for a waste ball unless there is a real reason for it, and if the Pitcher is wild he should not call for a waste ball, but take his chances at throwing out the man stealing. He should seldom call for a waste ball if his team is ahead three or four

runs. The man on the base is not likely to steal, and if he does, it will not win the game, so take no chance of walking the batter. There may be an exception when the other side has men on bases and he thinks he can successfully try some play to catch a runner off his guard. (See play of First Baseman.)

On bunted balls the Catcher should tell the Pitcher what to do with the ball. If a man is on first the Pitcher will have two chances, first or second. At all times the Pitcher should do what the Catcher tells him. The Catcher should tell the Pitcher what to do just before the Pitcher gets the ball. For example, with a runner on second and a hit to right field, the Pitcher must be directed to get on a line with the throw, half way between the Pitcher's box and home plate. If the throw is too late to retire a runner at the plate, the Pitcher should intercept the throw and try to retire the runner at second. Here the Catcher has the play in front of him and can tell what should be done.

**Watching Runners.**—The Catcher should always come up to the throwing position, even if the runner does not steal. Thus he is always in readiness to throw if the runner does try to steal. (Illustration 49.)

**Plays to the Plate.**—Stand near or on the third base line. This is where the Catcher must prove his mettle. The Catcher who stands over to the side and barely touches the runner, is not the man who will win ball games. When the throw is wide he should get the ball and dive for the runner if necessary.

**Running Down Base Runners.**—If unable to catch the man do not let him advance. Between third and home if the Catcher has the ball he should not throw until he is sure the runner is going back to third. This does not mean that after a man is trapped you should let him return without trying to retire him, but it does mean for you to be sure the runner does not advance. If the Third Baseman has the ball, he should throw it to

the Catcher in time to prevent a close play, if the runner starts home. Somebody must hurry the runner to make him run at full speed, then there will be a chance to touch him, because he cannot turn quickly if running at full speed. The player who has the ball should continually make bluffs to throw.

When a runner is coming from second to home and the Catcher sees that the ball is too late to retire the runner, he should stand as if the ball would not reach him. In this way he may be able to fool the runner, who will run slower, and give enough time to be retired. If the Catcher is on his toes with his hands out ready to catch the ball, the runner will use his greatest speed.

**Handling Bunts.**—In handling a bunt near the third base line, the Catcher should get the ball and turn completely around with his back to first base and then throw. In this way he can make the throw harder and more accurate. If the ball is near the foul line and the batter in the way, it will be necessary to face first base in making this play.

With a bunt down the first base line, he does not turn around but should face the base when he fields bunts.

If the Pitcher and the Catcher have an equal chance to handle the ball, the Catcher should handle it.

**Bluff Throws.**—With runners on first and second the Catcher should make a bluff to throw to first, which may start the man on second to third. The Catcher should then run out on the diamond with his arm back ready to throw the ball, but should not throw to either base until the runner starts. If the bluff throw is to succeed, it must look just like a real throw or it will be impossible to fool the runner.

**Signals with the Baseman.**—The Catcher should have signals with every baseman as to when he is going to throw. The outfielders should also know these signals, so they can back up the baseman. For example, with a runner on third base any time the batter swings at the

ball may be a signal that the catcher will throw to third base and signals for other plays may be devised and worked out in practice.

**Care of Equipment.**—The Catcher should take care of his implements and above all his glove. If he uses a glove with very little padding, he should use one with more padding on cold days and in practice, so that he will not be so likely to get a sore hand. Vaseline is a good oil to use on the glove.

**Sore Hands.**—If the Catcher does get a sore hand, he should use a sponge rubber pad or a sheepskin with the wool still on it. The soreness should be rubbed out and the hand painted with iodine.

## CHAPTER XXXIV

### PLAY OF FIRST BASEMAN

**Footwork.**—In order to get the proper reach the First Baseman should start with his heels on the inside corners of the base. Then he steps to the right or left, leaving the other heel on the base. After he learns this he can hop into a second position and bring the heel on the side away from the ball over to the side of the base toward the throw. He must not get into the habit of using the same foot at all times to touch the base. A first baseman should be able to hop into position with the toe of his shoe on the base. This gives him about a foot more reach than when leaving the whole foot on the base and enables him to receive the ball that much farther away.

**Position of the Hands and Arms.**—When the First Baseman has a play to make he should step toward the thrower and reach out as far as he can. In this way



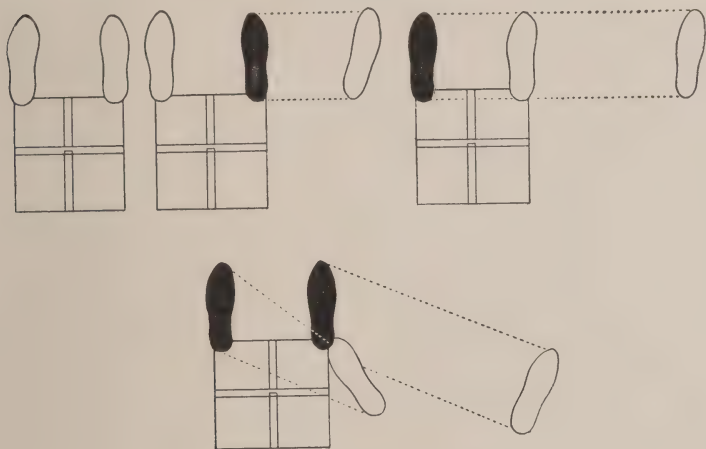
ILLUSTRATION 43. POSITION OF THE FIRST BASEMAN

Reaching out toward the thrower to catch the ball when the play will be close

he may sometimes be able to gain a decision. (Illustration 43.)

In all cases the First Baseman should get the ball. If

it is a bad throw to the left, he may be able to get the ball and touch the runner. If it is a bad throw to the right about the only thing he can do is to stop the ball. If the ball is over his head and he must jump, he should come down with one foot on the base.



FOOTWORK OF FIRST BASEMAN

When the Second Baseman or the Pitcher makes a quick throw to first, the First Baseman should take a crouching position and be on the alert. The throw may be at his feet or with too much speed for a short throw and it is easier for him to handle the ball when he is low. In order to do this he must practice it often. (Illustration 44.)

**Plays the First Baseman Must Make.**—When the ball is bunted and the Catcher handles it, the First Baseman should step out into the diamond toward second base, keeping his left foot on the base, and give the Catcher a mark at which to throw. This lessens the danger of hitting the runner. (Illustration 45.)

When there is a runner on first base, the Pitcher will be trying to hold him close. The First Baseman should

have his right foot on the base with the left out toward the Pitcher, or both feet alongside the base on the side towards the Pitcher. This lessens the danger of being hit by the runner and permits him to start fast to field



ILLUSTRATION 44. POSITION OF THE FIRST BASEMAN

Taking a throw from the pitcher or the second baseman

his position. The First Baseman should be able to touch the runner with one continuous motion of the arms and hands.

He should hold the ball firmly and not try to jab the runner. The jab is a time loser and he may drop the ball or have it knocked out of his hand if he tries to touch a runner too hard. A rough play of any kind is risky and shows poor sportsmanship.

When the ball is hit to the First Baseman and he is unable to get to the base himself, he should make the following play:

As soon as he gets the ball, he starts towards the base, while the Pitcher is coming over towards it.

When the Pitcher is about ten feet from the base, the First Baseman should toss the ball to him and about five feet in front. The Pitcher takes the ball on the run as he crosses the base. (Fig. 44.)

If the Pitcher fails to come over to the base the First Baseman should slide or make all possible effort to retire the runner himself.

With a runner on first only, the First Baseman should detain the runner by playing on his base, except in the ninth inning and with his team two or more runs ahead. Then he may play back, as he would if no runner were on the base. The aim is to get three men out, and if he is back, he has a better chance to field a ball in his direction.

With runners on first and second and two out, the First Baseman should be back to his deepest position. It is necessary to retire only one more man and he has no fear of the base runner on first base stealing unless the runner on second base steals. The First Baseman, therefore, should take the best position from which he can field any hit in his direction.

With one man out, the First Baseman plays on his base to try for a double play by holding the runner on the base. The First Baseman may also play on the base, to hold the runner, so the Catcher will have a better chance to throw him out at second, if a double steal is attempted, or may play only half way back, which will give the base

runner a slightly greater lead than he would be able to take if the First Baseman played on the base. This would make his fielding ability much greater. If the First Baseman plays deep, however, the runner may take a greater lead and it is possible to work the following play. On a signal, the First Baseman can go in behind the runner and the Catcher throws to first. In making this play the Catcher should signal for a waste ball. If the Catcher tries this play and happens to make a bad throw, do not criticize him for it, as this will make him afraid to try again.

One of the dangers of this play is that an alert runner on second will be able to go to third, but usually he will not try to go. This chance is better than not to try the play to retire the runner at first base.

With a man on first, no outs, the score even and a bunt expected, the Second Baseman goes toward first base 10 or 15 feet and the same distance toward the base line. The Third Baseman is 10 or 15 feet in front of the base line toward the batter, and if he is sure the batter is going to bunt, he goes in toward the plate every time the ball is pitched, being sure to get back if he does not handle the ball.

The First Baseman plays on the base. As soon as the Pitcher starts to throw he runs in toward the batter.

As soon as the Second Baseman is sure that it is to be a bunt, he goes over to cover first and takes the throw, if the First Baseman fields the ball. If the First Baseman does not field the ball, he should come back and cover the base himself. In order to learn this play it is necessary to practice it.

On a play to the home plate, with the score even, the First Baseman should come in close to retire the runner if he fields the ball.

The Infielders should all come in, when the winning or the tying run is on third base, except when there are two out. . Never come in otherwise, unless your team is

two or three runs behind. The man on third can get a bigger lead, while a hard hit ball will go through and a pop fly will go over. The runner on third is the best man to retire, but at the same time the hardest.

## CHAPTER XXXV

### PLAY OF SECOND BASEMAN AND OTHER INFELDERS

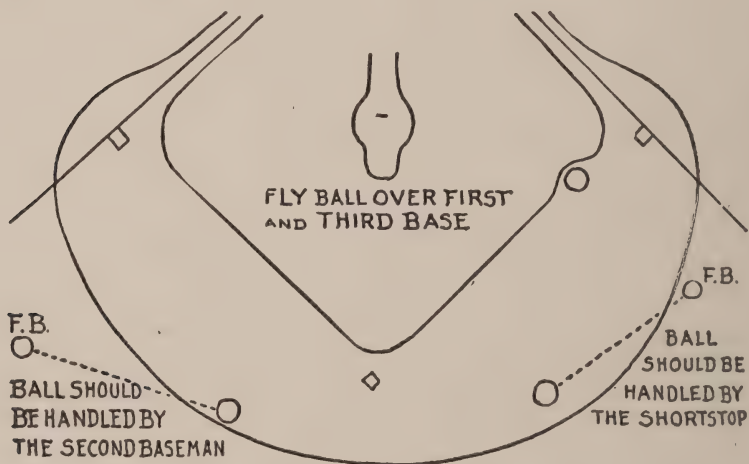
**The Throw.**—A short arm overhand throw is the common throw used by all Infielders. It is necessary, however, that Infielders be able to throw underhanded and side arm as well as overhanded and to throw from any position in which they may get the ball. Also certain plays may be made better with one throw than another and different positions may require more throwing of one kind than another. The time in which a play must be made and the position after fielding the ball may make one throw much better than another. It is a good general rule to throw overhanded when possible because the ball travels faster and in a straighter line.

**Double Plays.**—When the Second Baseman starts the play, if he is running toward first base to field the ball he should turn around to the left to throw. If he is running toward second he should make a quarter turn to the right and throw the ball. If he is not very far from second, he should not straighten up, but toss the ball to the Shortstop covering second. In all of these throws the Second Baseman should not straighten up or take any kind of a wind-up.

When the Shortstop starts the play, the Second Base-

man should be able to catch the ball and make the throw to first without any loss of time. He should take his position on the inside corner of the base or with the base between his feet, and as soon as the ball is caught he should step out into the diamond, pivot on his left foot and make the throw to first. (Illustration 46.)

The Shortstop should make the throw to second, on this play, chest high.



When a double play is possible the Second Baseman and Shortstop move in closer to the base line and nearer second base.

Five ways of making a double play when the ball is hit to the Second Baseman are:

- a. Ball is hit on a line or fly and man on first has left his base.
- b. Ball hit on the ground, Second to Shortstop to First.
- c. Ball hit near second base on the ground, touch the runner, then throw to first.
- d. Ball hit near second base on the ground, touch the base, then throw to first.

e. Base runner going to second stops, turns, and runs back toward first; throw to First and then the base runner must be run down to retire him.



ILLUSTRATION 45. POSITION OF THE SECOND BASEMAN

Observe what an easy matter it will be to touch the base runner coming from first

*On all double plays be sure to get the first man and always touch the base if possible.*

**Catching Fly Balls in the Infield.**—The first man who calls has the right of way.

In handling Fly Balls as shown in the diagram, the Shortstop and the Second Baseman do not have to back up, but can watch the ball all the time they are going



ILLUSTRATION 46. POSITION OF THE THIRD BASEMAN

Taking a throw from the Catcher, when a man is stealing third base

after it. On the other hand, if the First Baseman or Third Baseman handles the ball, they must back up, and so lose sight of the ball, making the play more difficult.

In calling for the ball do not call too soon. If there

is a heavy wind blowing toward the outfield, every man who thinks he has a chance for the ball should start, but he should not call until he knows he will be able to get to the ball.

In catching the ball when thrown by the Catcher the Second Baseman's position is on the forward corner of the base or straddling the base (Illustration 45), and facing first base, because in this position he can catch the ball and with one motion touch the runner. If you stood in front of the base the runner could slide out of your reach while if you stood on the first base side you would be in danger of the runner's spikes.

Set yourself and give the Catcher a mark to throw at if at the base in time to do so. If the ball is a little wild, move the feet and get it. Do not stand still and miss it.

After the ball leaves the Catcher's hands, get in the best possible position to handle the throw. If the ball is to the side toward third, get between the ball and second base, and dive for the runner if it is necessary. If the ball is to the side toward first, move over in position to touch the runner as he passes.

The Third Baseman in taking a throw from the Catcher should have the home plate side of base between his feet with his right side a little toward the Catcher. This puts him out of danger of the man sliding and also makes it easier to touch the runner.

On all double plays do not look for first base just before the ball reaches your glove and thereby miss it altogether.

**Fielding Position—With No Runners on the Bases.**—With a left-hand batter who is fast or who may bunt for a base hit, the infielders should move in. The Second Baseman five to ten feet; Shortstop the same distance; Third Baseman a few steps; First Baseman come in but little. They should be close enough to throw the runner out if they field the ball.

The Third Baseman should handle all slowly hit balls between himself and the Shortstop, for the reason that he is in a better position to throw the ball after he gets it than the Shortstop would be if he handled it.

## CHAPTER XXXVI

### PLAY OF THE PITCHER

**How to Hold the Fast Ball.**—The fast ball is the best and most commonly used. Hold it with the first two fingers across the seams or at least across one seam at the point where seams are closest together. The thumb should be held under the ball, but care must be taken not to get the thumb too far under, because the ball should leave the end of the fingers. (Illustration 47.) The thumb may be bent or straight to suit the individual thrower.

**How to Throw the Fast Ball.**—There are three common arm motions with variations of each used in throwing the fast ball. They are: overhand delivery, side arm delivery, and underhand delivery. In all three the ball should carry in toward the batter, i.e., curve in. The revolution of the ball makes it curve or shoot. The fast ball should revolve directly forward, which tends to make its path of travel a straight line rather than an arc.

**How to Hold the Out Curve.**—The ball is held in a similar manner to the fast ball with the second finger along one of the seams, the thumb placed underneath the ball, but not around it. The ball should be held out as far toward the ends of the fingers as comfortable, in

order to secure the greatest amount of rotation. (Illustration 48.)

**How to Throw the Out Curve.**—The delivery is side arm



ILLUSTRATION 47. THE FAST BALL

Two fingers on top across the seams. The thumb underneath

with the arm parallel to the ground or nearly so. At the finish of the throw the wrist and fingers turn with the arm and come across in front of the body with a snap.

Early in the season it is not a good policy to give the final snap with the wrist, because the arm will become

sore if not already in good condition. Instead of the snap, roll the ball over the fingers, keeping the wrist straight.



ILLUSTRATION 48. THE CURVE BALL

Two fingers along the seam. Thumb underneath but not around the ball

**The Out Drop.**—The out drop is held in the fingers in the same manner as the out curve, but the delivery of the out drop is different from that of the out curve ball in that the arm travels in a plane at an angle of 45 degrees.

The out drop is the most common curve and is very effective.

**The Direct Drop.**—The ball is held the same as in the out curve, but the delivery of the direct drop is made overhand. The snap of the wrist is directly downward. The direct drop is the most effective curve ball.

**The Up Curve.**—The underhand curve ball (raise curve) is held the same as the out curve. The delivery is the same except that it is directly underhand.

In throwing the curve, the ball should come out over the index finger and should rotate about an axis which is perpendicular to the direction in which it curves. The only force that makes a change in direction in the curve ball is the arm and wrist motion.

There are many other kinds of curves which can be thrown, but are made illegal by rule, such as the spit ball, emery ball, mud ball and shine ball.

**Control.**—Other things being equal the Pitcher with the best control will be the most effective. *Control is even more important than speed or curve* and is the one thing in pitching which can be acquired. The Pitcher who has control will have to pitch perhaps only half as much in a ball game as the man who does not have control.

Control is the ability to pitch the ball to the chosen spot at the time desired, after having decided where the ball should be pitched. Control does not necessarily mean the ability of the Pitcher to throw the ball over the plate, but rather the ability to pitch to a batter's weakness or away from the place where he hits the ball most successfully. The Pitcher may not have a good curve ball or a good fast ball, but there are very few who cannot get control by sufficient practice. Do not throw at full speed when practicing for control.

**Beginning to Pitch.**—Early in the spring pitch as many times over the plate as is possible and do the same thing in batting practice. As your control becomes better, the plate will look larger.

It is a good plan to have a batter stand up at the plate when pitching and the Pitcher should observe what effect his control will have on batters.

After learning to get the ball over the middle of the plate, try it inside, high and low, then outside, high and low.

Avoid pitching at the waistline and over the plate. When the Pitcher finds a batter who is weak on a certain ball, he should pitch it only and to do so he must have control.

**How to Get Control.**—Adopt one method of delivery and use no other except occasionally until control is mastered. Then add a second method of delivery if desired, a third perhaps, and so on. Overhand or nearly so is the best style to adopt if it is not an unnatural delivery, because the Pitcher will be able to get a better curve. This does not mean that you should change your delivery too much from a natural style.

Pitch each ball, even when warming up, with the idea firmly fixed in mind of having it reach a definite spot. Practice, practice and practice.

The difficulties of control may come from:

- a. Sore arm.
- b. Changing the delivery too much or changing the position of the ball in the hand and fingers.
- c. The wind.
- d. Condition of the box as to the holes to pitch from and in which to step.
- e. Trying to put too much on the ball.

In spring practice be sure that you do not pitch too long. When the arm becomes a little heavy and it takes an extra effort to throw the ball, it is time to stop. Wear warm clothing. A woolen undershirt is better than a sweat shirt or a wool jersey, because less air can get to the arm through a woolen undershirt.

Avoid hot liniments and too much rubbing unless the arm is really sore. Hot towels are the best for soreness.

In cold weather it is a good plan to put grease or vaseline on the arm to keep the cold air away from it.

**Warming-up Exercise.**—Start slowly and never less than 60 feet from the Catcher. Increase speed gradually,



ILLUSTRATION 49. THE PITCH

The point of delivery with the ball farthest behind the body using the fast ball until your arm is warm, and then throw at full speed. Then use the curve ball. The curve ball should be started slowly also, even though thoroughly warmed up.

Just before the game, pitch about six curve balls and six fast balls at full speed. Then if there is a wait until the game starts, pitch the ball to the Catcher at about



ILLUSTRATION 50. THE PITCH

Finish of the overhand throw

half speed. As soon as the game starts get out on the field quickly and start pitching at full speed in order to be fully warmed up in both body and arm. More Pitchers are taken out of the game because they are not warmed

up than for any other reason. In cold weather use 15 minutes to warm up. In hot weather use 10 minutes.

It is necessary for the Pitcher to be in better condition physically than any other man on the team. Avoid warming-up too much as well as not enough and do not waste any strength. Be careful about pitching so fast as to become winded. In order to get in condition and stay that way chase fly balls in batting practice, when not pitching or hit fly balls to the outfielders. Fast sprints are also helpful.

**The Pitcher as an Infielder.**—As soon as he pitches the ball the Pitcher becomes an Infielder and should be given practice in fielding on both sides of the box, but mainly on third base side.

The Catcher should return the ball as nearly shoulder high as possible. The Pitcher should walk no further from the Pitcher's rubber than is necessary and should conserve his energy at all times.

In handling bunts in front of the plate the Pitcher should throw from the position in which he fields the ball, but never underhanded if another way is possible. With bunted balls on the first base side, the Pitcher should handle the ball or be ready to cover the first base.

In handling bunts in front of the plate the Pitcher should learn to work with the Catcher and agree as to who will handle the ball. They should coach each other and on all bunts the Catcher should tell the Pitcher what to do with the ball.

The Pitcher should practice covering first base and receiving throws there from First and Second Basemen. The Pitcher and Third Baseman work together in about the same way as the First Baseman and the Pitcher.

Pitchers must learn to handle the ball thrown fast from the Catcher on a double steal; that is, the Catcher may pretend to throw to second and instead throw to the Pitcher.

The Pitcher should back up every play that gives any

chance of an overthrow. He should be at least 50 feet back of the man he is backing up.

On all cut-offs from the outfield he should be 60 feet from the home plate in line with the throw. The Catcher tells him whether he is to stop the ball or let it come to the plate.

**Waste Ball.**—This ball is used to help the Catcher throw out a base runner, and to prevent the batter from hitting the ball. It should be shoulder high outside, always a fast ball and never a curve or change of pace, and the Pitcher should get it away fast. The reason he doesn't want the batter to hit is to break up a hit and run play, bunt and run, or squeeze play, and to assist the Catcher in throwing out a base runner.

Every infielder should know that it is to be a waste ball.

If the sign for the waste ball is given, the Pitcher must pitch it, because if he does not, the infielders will be out of position and it will be easier for the batter to hit through them.

**Throwing to the Bases.**—With a man on first the throw by the Pitcher should be knee high and on the second base side. It should be quick rather than hard, thrown at about three-fourths speed. It should not be difficult for the First Baseman to handle.

With a man on second base, if the Shortstop covers the base, the throw should be about one foot on the third base side and the Center Fielder should back up the throw.

If the Second Baseman is covering the base, the throw should be about one foot away from second on the first base side and should never be too hard to be handled well by the baseman.

Use the turn that is natural for you. In turning to the right the throw is usually not so hard and the Pitcher has the play in front of him. In turning to the left the pitcher will usually throw harder and the throw is more

deceptive. (Applies to right-handed pitchers.) The throw should be waist high or lower.

Throw to second on a signal from the Catcher or a sign from the Shortstop. The Pitcher may also give the sign himself or throw without any signal.

With a man on third the Pitcher may or may not have a sign with the Third Baseman, but it is safer to have a signal. It is dangerous and difficult to throw to third base.

**The Squeeze Play.**—The Pitcher is the only man on the team who can break up the squeeze play. He can do so by pitching the ball so the batter cannot hit it. With right-hand batters he either pitches out or at the shoulders. Pitching at the shoulders is probably better, because on the pitch out the Catcher may not be able to get the ball and get back to touch the runner. It is a good plan to throw to third often when the squeeze is likely to be attempted and pitch with a wind-up motion.

**The Balk Motion.**—The balk motion is very essential and should be learned. It should be a development from the first motion of the delivery. The coach should get over on first base and watch the Pitcher's first movement and have him work for a balk motion from this movement. It may be a development from moving the foot, knee, leg, hips, shoulder or head. By strictly interpreting the rules most balk motions would be called balks if detected by the Umpire. Practically all Pitchers have a balk motion that is considered legal by Umpires. Their opinions may vary greatly, however.

**The Batter's Weakness.**—If not sure what a batter's weakness is, pitch him a curve ball. The following are the common weak points of right-hand batters:

A fast ball on the inside corner, between the letters and the shoulder.

A curve ball on the outside corner, knee high.

Never pitch to the inside for a man who pulls away.

Never pitch low to a man who drops the end of his

bat, because he will be hitting up. Instead give him high fast balls. Never pitch a slow ball to a poor hitter.

Left-hand batters are usually weak on balls pitched as follows:

A fast ball, low on the outside corner.

A fast ball, high on the outside corner.

A curve ball on the inside corner, knee high.

A curve ball on the inside corner, across the letters.

When a man swings hard, curve the ball. Also when a right-hand hitter is trying to hit left-handed.

A good rule to follow is, pitch opposite to where the batter hits naturally, that is, if he hits naturally to right field, pitch on the inside corner, and if to left field, on the outside corner for right-hand batters. Use the reverse of this plan for left-hand batters.

**General Suggestions to Pitchers.**—If you are pitching too far to either side, move your Catcher in the opposite direction.

When your control is bad, move your feet on the rubber.

Strive to retire the first batter in each inning.

Listen to the Catcher on all fielding plays.

Do not forget the base runners and whether or not they are fast or slow and where they are.

Always make batters hit. Never walk them unless for a good reason.

Try to keep the batter under tension by making one of the first two pitched balls a strike. Make the first a strike if possible.

Be confident and cheerful and inspire confidence in your teammates. Never lose confidence because of errors, but pitch harder.

Observe where your Outfield and Infield are playing.

Never listen to opponents or talk to them.

Do not get careless with weak batters, but try hard to retire them.

During delays in the game keep warm by throwing to the First Baseman or some one else.

Never relax at the finish of a game, even if your team is several runs ahead.

Be willing to take advice from the other men on your own team, as they will be trying to help you; two opinions are better than one.

## CHAPTER XXXVII

### PLAY OF OUTFIELDERS

**Calling for the Ball.**—Outfielders should call for the ball in no uncertain way. It is very important that the Outfielders never try to catch a ball without calling for it. In order to make the calling natural it is necessary to call for the ball in practice, even with no one near. Above all the call should be loud and clear.

There is no known system that will keep men from bumping one another once in a while, but the following is good:

*a.* The first man who calls for the ball has the right to it.

*b.* If two men call at the same time the Center Fielder has the right to it.

*c.* If an Infielder and an Outfielder both call for the ball at the same time the Outfielder has the right to it.

If you use the above system, when a man calls for the ball all others should reply, "Take it."

Some teams have one man call all the plays, but this plan is not successful. No player can at all times tell which man should handle the ball when he is not near the play.

**Fielding Fly Balls.**—Get under the ball as fast as possible. If you have only twenty feet to go, run just as fast as if you had forty feet to go. You can do your waiting

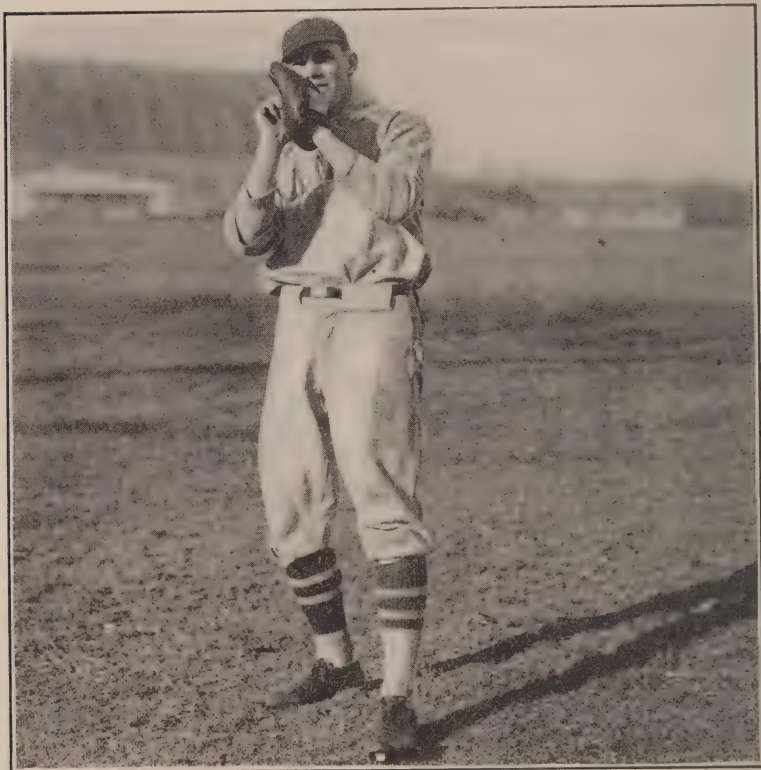


ILLUSTRATION 51. POSITION OF THE OUTFIELDER

Observe that this is the position in which the ball should be caught if less than two out and a runner on third base

after you get under the ball, and if you misjudged it you will have time to change your position and still get the ball. It is a very bad habit to time the ball so you will just barely get to it.

The position of the hands may be palms up and the little fingers together, or palms up and the thumbs together. One is as good as the other, but you should not get in the habit of catching the ball the same way at all times. You will not always have the chance to handle the ball in the same manner.

The Outfielders should be relaxed and the weight of the ball should drop the hands. Never put the hands up until you are under the ball and ready to catch it. You can run much faster with the hands at the side than you can with them out in front of you.

If the ball is hit over your head turn and run back as fast as you can, and then turn about. Never run sideways or backwards. This run can be mastered only by much practice.

In running forward an Outfielder should never give up if he has the slightest chance of getting the ball, and if necessary he should dive for it. The "never-give-ups" are the kind that make good Outfielders.

In line drives the Right and Left Fielders should know that balls hit down the foul line will curve towards the foul line and they must get over just a little further than where they think the ball will go.

Never jump into the air after a fly ball when it is not necessary.

**Handling Ground Balls.**—There are two ways of handling ground balls in the outfield. With a hit to center and no runners on bases the ball should be played safe and sure. With a hit to center and a man on second, rush in after the ball, play it fast and throw in to the plate if it is possible to get the man going home. There is a greater chance of missing the ball, but, if it is not played fast, there will be no chance of retiring the man going home. If a fielder is making this play and misses the ball, do not censure him for it, but, instead, tell him to try it again the next time. There is no surer way to

spoil a ball player than by scolding him for doing the right thing even if he fails.

**Backing Up.**—Outfielders should back up each other on all plays, and also back up the Infielders, so when the ball is missed, there is another man to stop it. This must be learned in practice games.

**Throwing the Ball.**—When the Outfielder has a throw to make, he should “get set” before making it. If he is throwing to the plate the ball should be thrown on a long bound, that is, the ball should hit between 20 and 30 feet from the base. There are good reasons for this. First, the ball will get to the Catcher faster. Second, there is no danger of an overthrow. Third, if the ball is thrown too late, the Pitcher or other “cut-off” man will have a chance to stop it and play for the man going to second.

**Relaying the Ball to the Plate.**—On a three base hit to right field, the Center Fielder should get between the Right Fielder and the plate ready to relay the ball. Be sure that the Right Fielder does not merely pick up the ball and throw it, but that he looks where he is throwing.

When there is a runner on second and a base hit is made, never try to throw the man out at the plate if there is no chance. The only chance is when the ball is hit hard and you get it quickly. When there is no chance, throw the ball to second and do not make useless throws.

If a man is on third, the ball should be caught near the right shoulder in order to be in a good position to throw. (Illustration 51.)

**Watching the Wind.**—If the wind is against the batter, fielders should advance, but not so close that they cannot handle line drives, because the wind does not effect drives very much.

If the wind is with the batter, move out deep and not just a few feet, and if there is a cross wind, move with the wind.

**Playing with the Infield.**—If the Infield moves in close,

the Outfield should move in, being careful not to move too far. If there is any question as to playing out or in, play out. Balls hit over your head mean home runs.

**Playing with the Pitcher.**—If the Pitcher has much speed, right-hand batters will be hitting more toward right field and left-hand batters to left field.

With a slow curve ball Pitcher, they will be hitting more toward left field. Left-hand batters to right field.

If the Pitcher has a snap at the end of his throw, the batters will always be hitting late.

**Playing with the Batter.**—If the batter is left-handed the Left Fielder should come in, because it is very seldom a left-hand batter hits hard to left field. At the same time the Right Fielder should play deeper.

When playing an opposing team the first time the Outfield on the first four or five men at bat should play deep and a little nearer in for the rest of the batting order.

If the lead-off man is small in size, it may be safe to come in a short distance.

With two strikes and three balls called, play deep.

**Placing of the Outfielders.**—The fastest man should be in center field. The other two fields are about the same, but a left-handed thrower should be in right field, because after he fields a ball he is in a better position to throw. It is difficult to keep his throws to the plate on the diamond from left field.

## CHAPTER XXXVIII

### SELECTION OF PLAYERS

**The Pitcher.**—The Pitcher is most important. This means the coach must spend most of his time with the Pitchers.

**The Catcher.**—The Catcher is of next importance to the Pitcher.

**Second Baseman, Shortstop, and Third Baseman.**—The Second Baseman, Shortstop, and Third Baseman are next in importance. Put the two strongest men on second base and at shortstop. These positions have double the chances of fielding the ball.

It is important to have good throwers on third base and at shortstop.

**The First Baseman.**—The First Baseman is next in importance and a player who is a good hitter but is a slow fielder and has a good arm should be put there.

**The Outfielders.**—Of the Outfielders, the Center Fielder is most important. Right and Left Fielders are of about equal importance. A left-handed man should be put in right field.

**Team Play with a Runner on First Base with No Outs.**—The First Baseman should play on his base (if the score is nearly even or the team at bat is ahead, he must be on the alert for a bunt). If the base runner is taking a big lead, the Pitcher should throw to first to prevent a good start on an attempted steal. If the Pitcher has a good balk motion, he may throw to first without using it, then if the base runner takes a rather big lead, he can make a good balk move and may be able to throw the man out.

The Pitcher should never throw when the base runner is not leading away. Neither should the Catcher make useless throws, and unless the man is taking a big lead, with a fair chance for an out, he should not make the throw.

**A Runner on First Base and One Out.**—The Shortstop and Second Baseman must play a little closer to second base, so as to be ready for a double play. The First Baseman leaves the base just before the ball reaches the batter, and goes down the line toward second.

If the ball is hit slowly to the Shortstop, Second or Third Baseman, or a fumble is made, try for the man going to first, because usually it will not be possible to retire the runner at second, except when the ball is hit near second base.

**A Runner on First Base with Two Out.**—A double play is not necessary. Play regular positions, except that the First Baseman stays on the base until the ball is pitched and then goes down the base line toward second.

**A Runner on Second Base with No Outs.**—With this situation most teams will bunt. Prepare for it with the First Baseman on the base line between second and first. The Third Baseman must not play in so far that he will permit an opportunity to steal third. If the ball is bunted he comes in, but not until he knows the ball will be bunted, because the man on second can easily steal third. When a bunt is expected, the Pitcher should pitch the ball when the base runner is going back to second, if possible.

If the ball is bunted to third base, the play can be made with the Pitcher handling the bunt and the Third Baseman covering his base, or the Third Baseman can handle the bunt and play the ball to first.

If the ball is bunted to the first base side the First Baseman and the Pitcher both try for it and play it to first base. The Second Baseman covers first base on this play.

**A Runner on Second and a Ground Hit to Second Baseman.**—The throw should be to first, but if the ball is hit to the Shortstop, it will depend upon where he gets the ball as to which base he will throw.



If the ball is hit to the Shortstop, who fumbles, and it is too late for play at first base, he should play it to third fast and may get the runner after he has made his turn. On all these plays each man should coach the other as to what to do with the ball.

**A Runner on Third Base with No Outs.**—The score should determine whether or not to bring the Infield in. If you are two or more runs ahead, stay out. If behind in the score, come in. With a winning or tying run on third base, come in.

The Third Baseman and Pitcher may have a signal to catch the man on third, but it is a dangerous play. The Catcher should throw to third when the man is taking a lead. The signal may be, when the batter swings at the ball, or, any time the base runner takes too much lead.

**Runners on First and Second with No Outs.**—A bunt may be expected and the First Baseman does not play on his base, but comes in short. The runner on second is the man to retire if it is a sure play. The Third Baseman comes in a step or two, then every time the ball is pitched, if he does not handle it, he covers his base. The Shortstop covers second and the Second Baseman plays so he can cover first base if the First Baseman handles the bunt. If the ball is bunted to the First Baseman, he should play to first base, if a play at third base is at all doubtful.

**Runners on First and Second, One Out.**—If it is possible to make a double play, play the ball to second and then to first.

If the ball is hit to the First Baseman, he should play it to first, unless he is a very good thrower and the ball is hit rather hard.

If the ball is hit to the Third Baseman near his base, he should touch his base, then throw to second or first.

If the ball is hit to the Third Baseman away from his base, he should play for a double, second to first.

If the ball is handled by the Catcher, his best play is to third.

The Pitcher throws to second for a double, except when the ball is hit very slowly to him. Then he plays the ball to first.

In an attempted double steal, do not make useless throws. If the man is too near to third, do not throw. Instead, throw the ball to second, because the man going to second is not expecting a throw and will not be running at his best.

**Runners on Second and Third.**—With no outs, the score even or the team in the field behind in the latter part of the game, move the Infield in. The Catcher may be able to catch the man on second. In this play an alert man on third will be able to score, but it will not happen

often. The Second Baseman may cover the base and a waste ball thrown to the Catcher, who makes the throw to second. If the man on second is caught off the base and tries to go to third, the Second Baseman runs him down, watching the man on third so that if he goes home a throw to the plate can be made. If the man on third is not carefully watched, he will score.

**Runners on First and Third.**—With no outs and the score even, the First Baseman should play on his base, with the Shortstop and the Second Baseman in the position for a double play. In this case do one of two things. Play for the double play or for the man going home. It is better to play for the double play except in the ninth inning and the winning or tying run on third base.

**Runners on First and Third with One Out.**—Always try for a double play if you can involve the batter, otherwise play in.

**Runners on First and Third with Two Out.**—Play back and retire the runner at first or second.

**Runners on First and Third, Stealing Second.**—When the Shortstop covers the base, the Second Baseman plays about 30 feet in front of the base. The Catcher then throws so either the Second Baseman or the Shortstop can handle the ball. If the man on third starts for home, the Second Baseman intercepts the throw and returns the ball to the plate. These players may reverse positions if necessary.

Another plan is to have the Catcher make the short throw all the time. In this case the Second Baseman uses his judgment as to whether to turn and throw to second or throw to the plate.

The Pitcher should always understand that the Catcher may throw to him. If the Catcher does throw to the Pitcher, he should try to make the runner on third believe he is throwing through to second by using the same movements and energy as when throwing there, being

careful that the throw is not too hard for the Pitcher to handle well.

The Catcher may also make a bluff throw to second, hold the ball and then look for the runner on third. The bluff throw should be made in the same manner as if throwing to second. The bluff throw may start the runner on third toward the plate and the Catcher may wait for him or throw to third before he can return.

Use only one man in the following play: The Shortstop or Second Baseman covers the base. When the Catcher throws, if the man on third starts home, the man covering runs in, gets the ball and throws to the plate. If the man on third does not start home the throw comes on through to second.

With two out or if you are four or five runs ahead, make the play through to second except when you feel sure the runner on third will attempt to score.

If this play is used against your own team be sure that the man going to second stops before he gets there, so the man on third will have a chance to score. If the base runner is certain of reaching second in safety, he should proceed, unless he wants to help the runner score from third by detaining the play.

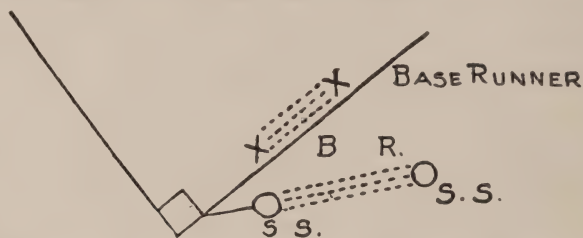
**Three Men on Bases, No Outs.**—With the score even or behind, in the latter part of the game, move the Infield in. If in the first part of the game, play the Third Baseman on the line, First Baseman half way back and Second Baseman and Shortstop back for a double play.

**Three Men on Bases, One Out.**—If you can involve the batter in a double play, play the Infield back; otherwise play in. In the first part of a game keep the Shortstop and Second Baseman out for a double play, the First Baseman half way back and the Third Baseman on the line.

**Three Men on Bases, Two Out.**—All the basemen play in their normal positions.

**Holding a Runner on Second Base.**—The Shortstop

moves over close to second and makes a few bluffs to cover the base. When the runner starts back to the base, he stops and returns to his position. On a signal to the Pitcher, he then runs in, stops, and goes on to the base. In most cases the runner will stop when the Shortstop does. By going on to second, the Shortstop is quite likely to catch the runner flat-footed.



On this play it is better for the Pitcher to turn to the right to make his throw. He will then throw underhanded, which will keep him from throwing too hard to the baseman. If he does throw too hard the ball may be dropped. If he turns to the right, he has the play in front of him. If he cannot learn to turn to the right he may turn to the left.

The Shortstop makes a move to cover the base and drives the runner back, then when the runner is leaving the base, the Second Baseman comes in and takes a throw from the Pitcher. In this case the Catcher may give the signal to the Pitcher when it is time to turn and throw, or the Pitcher may watch the play for himself.

The Pitcher may give a signal to the Shortstop or Second Baseman to take the throw at second. He then brings the ball up to his chest, and he and the man to whom he is going to throw count to perhaps three, when he turns and throws to second. The count may be to any number and is used to time the play, so the ball and baseman reach second at about the same time. Have one system and use it. The Pitcher should turn to second a great many times without throwing the ball, in order

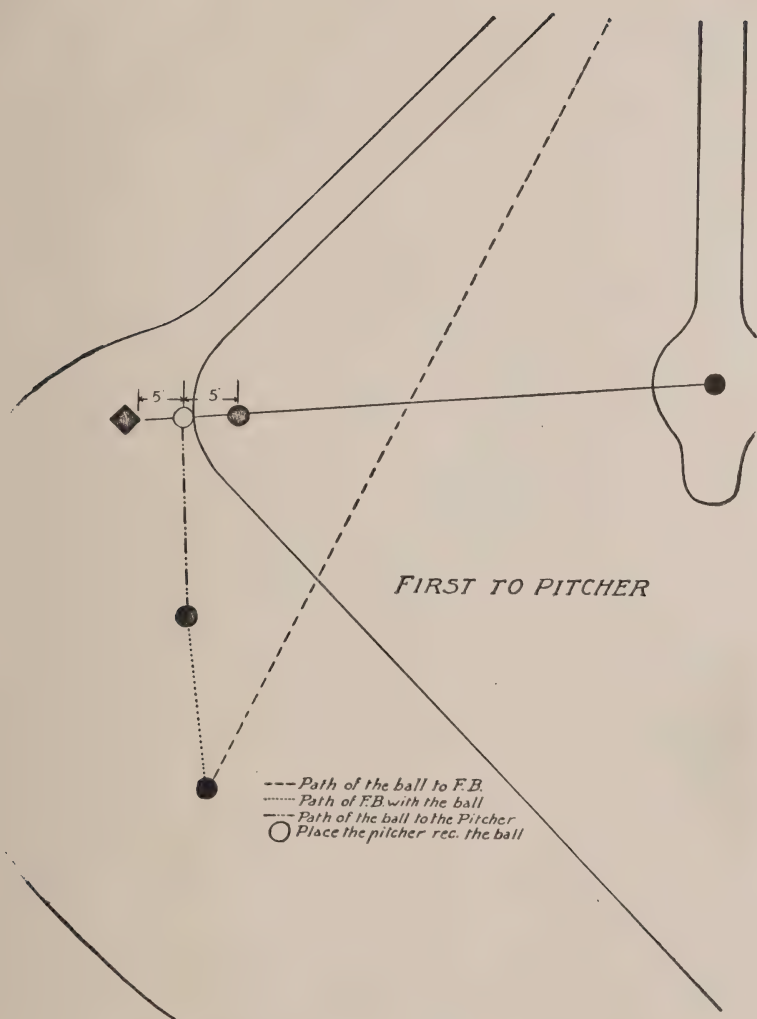


ILLUSTRATION 52.

On a hit between first and second with the First Baseman fielding the ball, the Pitcher covers first

to hold the man on the base and make these plays more effective.

**Catcher's Throws to Second.**—When he has a reasonable play the Catcher should throw to second. A waste ball should be pitched but it must be decided beforehand

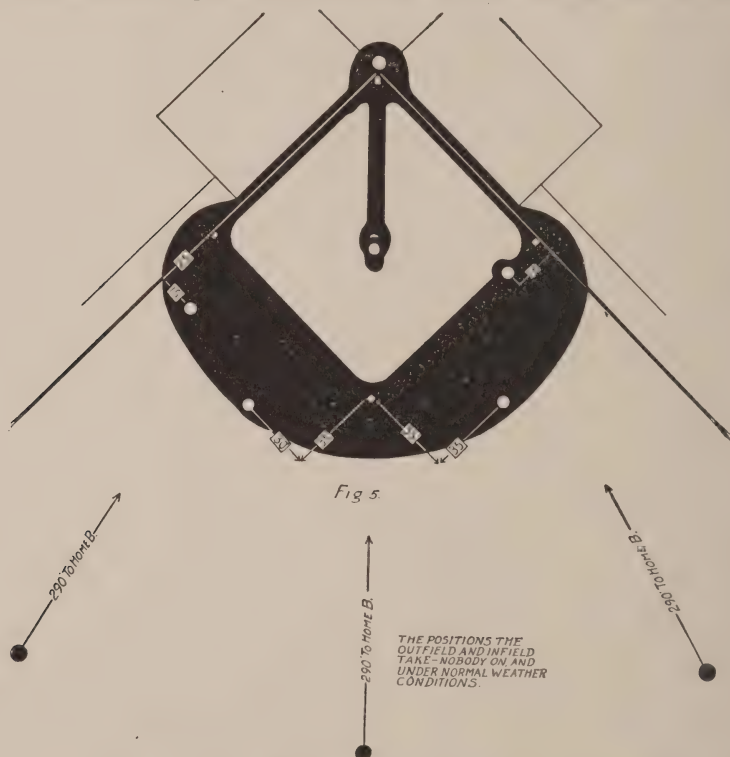


ILLUSTRATION 53.

who is to take the throw at second and this depends upon which man can handle it the best. With a right-hand batter, the Second Baseman usually takes the throw, but with a left-handed batter, the Shortstop takes it. Usually it is better to have the man who is playing nearest to the base for the batter, take the throw.

## CHAPTER XXXIX

### TEAM PLAY IN BATTING

**The First Man up in Each Inning.**—As a rule the first batter should take at least one strike and try for a base on balls. By this means he will make the Pitcher throw many more balls. If the Pitcher begins to pitch the first ball over the plate regularly, expecting batters to take one strike, then it is advisable to hit the first ball once in a while to make him more cautious.

With no runners on bases and two balls and no strikes it is a good plan as a rule to take a strike.

With two balls and no strikes and one out, if the batter is a good hitter try to hit. If he is a weak hitter, take a strike.

With two balls and no strikes, two men out, if the batter is a good hitter try to hit. If he is a weak hitter take a strike.

With three balls and no strikes, no outs, take a strike.

With three balls and no strikes, one man out, take a strike.

With three balls and no strikes, two men out, take a strike.

With three balls and no strikes, no outs, take a strike.

With three balls and one strike, one out, if the batter is a good hitter try to hit, if a weak hitter take a strike.

With three balls and one strike, two men out, if the batter is a good hitter try to hit, if a weak hitter take a strike.

With a runner on first base, follow instructions given when no one is on base. with a little more leeway on the hitting.

With a runner on second base, every batter should try to hit freely no matter what the number of outs. It is sometimes advisable to sacrifice, as when playing for one run in latter part of game.

With a runner on third base, hit freely at all times.

With runners on first and second, any number of outs, if the batter is a good waiter and a poor hitter, he should wait, but if he is a good hitter, he should hit.

If runs are needed to tie the score or go in the lead it may be advisable to advance runners by means of a sacrifice hit. Under nearly all other conditions try to hit unless the count is three balls and no strikes, then wait.

With runners on all bases, under nearly all conditions try to hit, unless the count is three balls and no strikes, then wait.

With runners on second and third, under all conditions try to hit.

**Sacrifice Hits.**—With a runner on first, no outs, score even, the best thing to do is to sacrifice, if the batter is a good bunter. The man on first does not go to second until the ball is bunted, but has as good a lead as he can get. The safest way is to bunt toward first base when possible.

With no outs and sometimes with one out it is wise to use the bunt as a sacrifice hit. Use it also when the score is even and often when ahead in the score, but never use it when behind in the score, unless the runners advanced will tie the score or place the team in the lead.

**The Hit and Run from First Base.**—With a runner on first, no outs or one out, the hit and run is played on a signal and the base runner must steal on the next pitched ball. When the runner starts to run the Shortstop or Second Baseman must cover second. The batter will try to hit through this opening, if he can see which man will leave his position.

The batter should aim to hit the ball, if it is pitched within his reach. (The defense for this play is for the Pitcher to throw a waste ball.) One of the advantages of the hit and run play is, if the ball is hit on the ground the runner is almost sure to get to second. Another is to keep the opponents guessing what you are going to do, and often a runner may go from first to third on the play.

**Bunt and Run Play.**—Bunt toward third base, if possible. This play must be played on a signal and the base runner should make the play in the same manner as a hit and run play.

If the Third Baseman handled the ball, the runner going from first to second makes his turn and if third base is not covered he may be able to go on to third.

When the bunt and run is to be played and the opponents come in too close, it may be advisable to hit instead of bunt.

**The Squeeze Play.**—This play is nearly always used with one out and a runner on third base. A signal is necessary. As the Pitcher starts to pitch, the man on third starts for home.

The batter must make every effort to bunt the ball on the ground and he should be a good bunter, but the base runner need not be very fast. (The defense is for the Pitcher to throw the ball so it cannot be bunted. Either pitch a waste ball or close to the shoulders.)

## CHAPTER XL

### BASE RUNNING

**Presence of Mind on the Bases.**—Know the score (this means consider it).

Know the number of men out.

Know the call of balls and strikes.

Know the inning.

Observe the strength and weakness of the opposition.

**Fundamentals in Base Running.**—When behind in the score, take no chance on the bases.

With no outs, play safe.

Aggressive base running is good when needing only one run, but, if two or three runs behind, the only thing that will win the game is a batting rally or a number of errors.

A man becomes a base runner when he hits the ball on fair ground, and in all cases he should run as hard as he can to first base.

**Going to First Base.**—Run hard for the base and look at the ball just enough to know what happens to it in order to know whether or not to make the turn toward second. In making the turn use the bag to pivot on and make the corner as sharp as possible. If the First Baseman is on the base, make the turn the best way possible.

If the ball is hit to the outfield make a turn before reaching first, but touch the base.

**Sliding to First Base.**—Never slide to first base, except to prevent running into the First Baseman or to avoid being touched by the First Baseman.

Never jump for the base because there is danger of getting hurt and it loses time.

**When to Steal Second Base.**—With no outs and the score about even, play safe. Don't steal unless the Catcher is very careless.

With one out is a fair time to steal.

With two outs is the best time to steal because there is a better chance to score. If the batter is weak, it may be well not to steal, in order to have a better man start the next inning in case you are retired at second.

**Studying the Pitcher.**—Study the Pitcher while on the bench and also when on the bases. It may be possible to catch some move in his delivery that will permit a runner to start stealing early, such as:

Body moves forward; front foot coming up; pulling back; calf of his leg becoming tense, etc. If able to discover this move of the Pitcher, a runner may get a step or two more lead on a steal.

**Getting a Lead.**—The successful base runner is the man who gets a good lead and is a good slider.

A lead is the distance a runner has reached from the base when the ball is really pitched. The runner should be on the way when the ball is being pitched or even before.

The good base runner will sometimes get caught off the base and the poor runner very seldom will, since he never gets the proper lead. Take one-half of the chance at first and the other half at second. If a man does get caught he should not be censured for trying to do the correct thing.

If you do not plan to steal there is no excuse for getting caught, and if the ball is hit you will have plenty of lead after the Pitcher throws the ball and before the batter hits.

**The Delayed Steal.**—Wait until the ball is pitched then take a natural lead (15 or 20 feet) and stop. As the Catcher brings his arm back to throw to the Pitcher start for second. This steal is successful when the Shortstop and the Second Baseman are not prepared to cover the

base every time the ball is pitched. If they are, the runner will not be successful.

If the Catcher throws to first base, when the runner has a long lead and no chance to return, he should go to second and not try to return.

**When to Steal Third Base.**—With no outs, never try to steal.

With *one* out is the only time to steal third base. The reason for stealing then is that a long fly to the outfield, a ground ball, or the squeeze play will score the runner. You can also score on a bunt.

Many other chances may occur when nothing but a base hit will score the runner from second base.

Even though with one man out is the best time to steal third, does not mean that you should not have your lead at all times and ready to advance.

With two outs, never try to steal third because a base hit is about all that will score a runner from either second or third. You would be just a little better off on third, but the chances are not worth taking.

When the batter swings, the runner should take another step, but if the batter does not hit, go back to the base fast.

**When to Steal Home from Third Base.**—With no outs, never try to steal.

With one out never try to steal.

With two out is the only time to steal home and then only if the Pitcher takes a wind-up or has two strikes on a batter who has already struck out in the same game.

**The Ways to Make the Steal.**—With a left-handed Pitcher, steal when he is taking a big wind-up. This may also be done with right-handed Pitchers. Or start when the ball is returned from the Catcher to the Pitcher. The man on third trying for a lead, should be out on foul territory at least three feet. If the ball is hit, it will not strike him on fair territory.

**Runners on First and Second—No Outs.**—Never try to steal.

With one out is the best time to steal. With two out is not as good a time to steal as when one man is out, but the chance is worth taking because if a steal is made, a base hit will score two runs.

**Runners on First and Third—When to Steal Second.**—With no outs do not try to steal if the opposition is strong. It is a fair time if the opposition is weak.

With one out, try to steal any time you have a long lead.

With two outs, try to steal at all times unless only one run is needed to win.

One way to make the steal with two men out is the same as with a runner on first base alone. The man on first starts to second when the Pitcher still has the ball. If the Pitcher turns toward second base, the man on third breaks for home and if the Pitcher throws to second, it is possible to score, that is, if the man going to second will stop before he gets there and will run up and down until the man on third scores. Never try this on a good Pitcher because he will turn to second and then throw home. Be sure the Pitcher knows that the runner is going to second.

If the Pitcher is trying to catch the runner going to second the runner on third base will have a chance to score on the throw to second.

A man on first should go to third on a base hit to right field, unless there is a good thrower in right field or the base runner is slow or the ball is hit too fast. It is a good plan to draw a throw to home base any time there is a chance to do so, even though not intending to score.

**A Runner on Third.**—When a ground ball is hit and no outs, play safe.

With one out try to score. Be sure to have the maximum lead and be balanced and ready to go either way. Do not wait to see whether or not the ball is fielded.

If the ball is thrown to first base and the runner on third is fast and the First Baseman is not a good thrower, the runner may score.

With runners on second and third and a ball hit on the ground, with any number of outs, try to score. Even if the man is thrown out at the plate, there is still a man on first and third, and as a rule, on the next pitched ball the man on first can go to second. Then you are not very much worse off than before. However, if opponents are strong they will play to stop a runner from third in case he tries to score on a throw to second. Against such teams try this play only after one out.

When a runner is on third, he should start home at the crack of the bat, but watch the ball only enough to be ready to return on a line hit or fly ball.

If the ball is hit on the ground, fielded fast and the man going home sees he has no chance, he should stop and run up and down the line until the batter has time to go from first to second or even third.

Never try to advance two bases unless stealing on the ball that is hit and the First Baseman is careless. If possible, make a turn, however, and be ready to advance if the opportunity is given or perhaps draw a throw to prevent your advance.

## CHAPTER XLI

### BASE RUNNING ON FLY BALLS

**Ball Hit to Right Field.**—The man on first takes his maximum lead from first; then if the ball is missed, he goes to second or goes back to first if the ball is caught.

It very seldom happens that a man on first can advance on a ball caught in the outfield, and the same is true for a man on second, though chances to advance are better.

On a long fly ball to the outfield a man on third base can score. As soon as the ball is hit, he should go back until the ball is caught, then break for home. On a short fly the man on third should take his maximum lead. If the fly is caught he cannot score, and if it is not, he can score with the lead.

**Modifications of Base Running Rules—Score and Inning.**—If behind in the ninth inning, do not steal, but in the early innings it may be advisable to steal.

**Balls and Strikes.**—With two outs, two strikes and three balls, steal in all innings.

No outs, or one out, a man on first base, and two strikes and three balls is a good time to steal, because if the ball is hit on the ground, there is no chance for a double play and with a fly ball to the outfield, the man on first has a chance to return. If the batter is struck out, it makes one or two outs and this is a good time to steal second base.

**Outs.**—With no outs, play safe.

With one out is fair time to steal.

With two out is the best time to steal.

If the opposition is so weak that they can't retire the base runner, steal at all times.

**Sliding.**—There are two ways of sliding, either head-first or feet-first.

The head-first slide should be avoided except when the runner loses his stride in going to a base, when going back to base, or to avoid being touched by baseman.

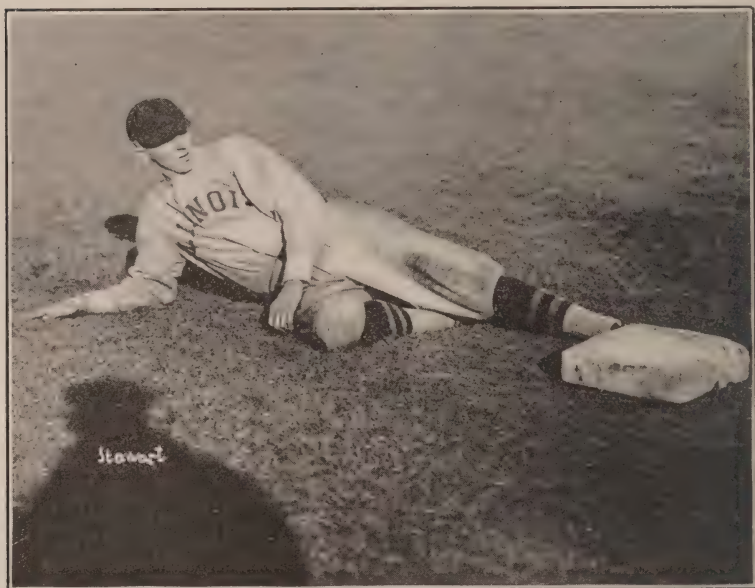


ILLUSTRATION 54. THE HOOK SLIDE

Observe that the *right leg is folded back under the left*

The reason for not sliding head-first is that the runner can be blocked off and it is dangerous.

There are two ways of sliding feet-first. With the outside foot folded down and under is the better way. In this slide (Illustration 54) there is not much danger of getting the ankles hurt and it is possible for the runner to get up on his feet faster (Illustration 55) after the

slide is completed, and so enable him to take advantage of overthrows.

With the outside foot thrown up off the ground has



ILLUSTRATION 55. THE HOOK SLIDE

Manner in which the runner should get up on his feet

the disadvantages that the former slide has in advantages. On this slide the runner should be sure that his body is flat on the ground in order to be able to raise

his leg off the ground, or he will often catch his spikes and turn his ankle.

Both of the feet-first slides are hook slides.

**How to Make the Hook Slide.**—Run in the base line, and watch the opposing baseman handling the ball, which will indicate the way to hook. If the second baseman is taking a throw in front of second, slide away from him to the rear and vice versa.

The toe should just reach the base and hook onto the nearest corner. Be sure to slide far enough away from the base so that the top leg must be straightened out full length, and on the foot turned under on the full length of the leg and on the forearm.

All slides are slower than running, but sliding makes it difficult for an opponent to touch the runner.

If a man slides in straight to the base, he should slide on his hips and not on his back. Both feet should go straight into the base.

Always begin the slide far enough away from the base to be able to just touch it at the end of the slide. The only way to learn this distance is by practice.

It is also a good plan to slide to avoid overrunning the base, even though there is no danger of being touched. Learn to fall in soft dirt, but learn to slide on wet grass, and never try to slide without sliding pads.

**Coach Control of Base Runners.**—The fewer the signals the better, within limits.

In giving the steal signal, if the opponents are watching the coach he should have some one else on the bench give it. The ordinary steal signal means go if you can get a good lead. Never try it unless you can get that lead. The signal means you have the permission to go.

There are two ways of getting the lead. First, the runner should stand as far away from first as is safe and then as the Pitcher starts to pitch, go on to second. The second is a better way. Stay close to the base. When the Pitcher is going to pitch advance a couple of

steps. Then, if the Pitcher pitches, you have a flying start. If he does not pitch, return quickly.

If the runner has taken a big lead and has been caught off first base by the Pitcher, he should not turn and try to go back, but should go on to second. A great many times he will be able to make it safely.

**Line Coachers and Base Runners.**—Use the best and most alert men as coachers with the best one at third base.

**Duties of the Coachers.**—Helping the umpire make some of his decisions by calling attention to infringement of rules. For example, if the First Baseman has the habit of drawing his foot off the base too soon, every time the ball is thrown to him, the coacher should call the umpire's attention to it. The coacher will find it a good policy never to address the umpire unless he has a grievance; then, when he does, the umpire will listen to him.

The coacher should know the number of men out. He should also know where the ball is and the runner should know this too. Getting caught with the hidden ball play is the fault of both the base runner and the coacher.

At first base if the opposing team is trying to catch a man by a throw from the Catcher, the coacher should never take his eyes off the First Baseman. It is a very good plan to stand with his back to the catcher and do nothing but watch the First Baseman. Then, if the First Baseman comes over to the base, the coacher can warn the runner quickly.

The coacher should be decisive and loud enough to be heard. It will impress the runner and he will understand if instructions are imperative.

On a play at second the coachers watch the Shortstop and the Second Baseman, while the base runner watches the ball.

With two men on bases, each coacher coaches the man nearest him or watches the two nearest basemen.

At third base the runner on second should depend on

the coacher and not turn to look where the ball is going, in order to know whether or not to make his turn.

Some of the signals the coacher should have with the base runner are: Slide. Score. Stop, but make the turn. Make the turn.

Use the signals as well as the voice because the base runner may not be able to hear with the usual noise at a ball game.

# BASKETBALL

## CHAPTER XLII

### FUNDAMENTALS

In order to become a good Basketball player you must practice sufficiently to acquire speed and skill. In order to acquire skill and cleverness in playing you will have to study the game as you practice. Good playing requires great agility and physical stamina which can be acquired only by constant training. The player must think clearly and rapidly and with sufficient accuracy to plan and time his play under great stress. Basketball requires more sustained intense action than any other game.

The fundamentals of Basketball are: Passing and receiving passes; Dribbling and Basket Shooting.

In the following pages the term, your goal, means the goal at which you are shooting.

**How to Pass.**—Most teams use the overhand pass, with either one or both hands. There is a difference of opinion as to which is best. With either, a pass of thirty feet or more can be made in a direct line. Long passes must travel in an arc, but a short pass should be in a direct line between two points, because in basketball a fraction of a second often makes the difference between keeping and losing the ball and a few losses of this kind may lose the game.

In making a one-hand pass, the body of a righthanded man is usually twisted slightly to the right, the arm drawn back, bent almost at a right angle, the upper arm in line with the shoulders. The ball is held on a level with the ear, resting against the palm of the hand and the fingers. The arm is suddenly snapped forward and the ball passed, chest high, to a teammate, from which position he can handle it best. It is thrown very much as a catcher in baseball throws the ball to second base. Although the ball rests against the palm of the hand as well as the fingers, the latter give most of its impetus.

In the two-hand pass the ball is raised a few inches higher, a little above the ear, is closer to the head, grasped by both hands, the arms bent at a right angle, and is hurled with both arms in a short, snappy motion. The two-handed pass can be made to right or left with equal facility, and in this respect has a slight advantage over the pass made with one hand. The underhand pass, with the arm extended full length downward, is seldom used. It has been discarded because it cannot cover distance with the speed and precision of the others and because it is more easily intercepted. However, occasions sometimes arise in which it is better than the others, as in making a short pass under the basket when an overhand shot is guarded. Players should practice it enough to be able to use it for such occasions.

In practice, put plenty of force into your passing, but learn the difference between passing quickly and passing swiftly. An eight or ten-foot pass should be made quickly, but not swiftly, or it may be fumbled.

**Catching the Ball.**—Fumbling is usually caused either by dropping the ends of the fingers too low in receiving the pass, or by overeagerness in reaching for the ball. A player should pass the ball as quickly as possible, but he must get it before he can pass it. A player who fumbles should resolve to make sure of his catch first, and the chances are good that he will soon cure himself of the

difficulty. Many players fumble because their minds are on the pass to be made rather than on the catch.

Remember that to make sure of the catch you must relax your hands a little just as you would in catching a hard drive in baseball.

The fingers should be spread apart naturally, and stick straight up, and not be drooped forward at an angle to the body, where the ball will strike them on the ends and get away.

**Throwing Baskets.**—Every unobstructed shot should yield a goal. Long practice alone will make this possible and you cannot get too much practice. One thing absolutely essential is that the player must learn to handle his arms independently of the movement of his legs. The latter must be extremely rapid to beat his guard to the basket even if only by a step, but the arm-reach must be a slow, even and steady movement. The tendency is to hurry the arms because the legs are moving so fast that it is extremely difficult to extend the arm in a steady, even movement. It can be learned, and must be done if a man is to become a consistent scorer on shots under the basket. No single fundamental of the game will yield such satisfactory results as constant drill in this particular. There is a great difference between dropping the ball into the basket in this way and throwing it in. The former makes a sure goal, the latter frequently misses. It is important for players to rush to the basket in practice as fast as they do in a game. This is a point that most players do not readily grasp. They do not realize that there is a vast difference between the coordination of a half-speed approach and that of full speed, and full speed is what they must use in a game.

Most players prefer to approach the basket from one side or the other and roll the ball into it. In this shot, the point on the backboard which the ball should strike depends upon the speed of the arm movement and the amount of roll given the ball. The faster the armwork,

the further away the ball should strike. Observation shows that a player with the proper arm movement and the usual roll of the ball will strike the board about four inches on his side of the basket, and the same distance higher than the rim. To do this, reach high, pick out the spot with your eye as you rise in the leap, and try to roll the ball to it. This is one of the greatest points in shooting. Practice it and you will be delighted with results.

Some shots must be made from in front of the basket. Most players find these more difficult than shots from the side, therefore the approach should be made from the side whenever possible. Front shots may be lifted into the basket without touching the rim, or they may strike the backboard. The latter are difficult, and usually more successful if banked low. Occasionally a player can approach the front of the basket at full speed and drop the ball through the hoop, but such players are rare.

In making front shots under the basket, reach high and push the ball up, in a high, narrow arc, instead of trying to roll it in over the hoop.

Hold the ball in the fingers, not in the palm of the hand, in shooting, and depend upon the fingers and wrist for the turn of the ball. The fingers are more sensitive than the palm and can perform a more delicate movement. This also applies to long shots. Most players rely too much upon the arm movement for long shots. The writer has made 33 shots out of 90 tries from the middle of a 70-foot court, and he has discovered that it is the final snap of the sensitive finger tips which brings the best results. The arm and chest muscles come into play, but it is the final touch of the fingers which gives direction and control.

Always throw the ball in a high arc in making long shots and it will have a better chance of going through because the angle at which it meets the basket will be larger.

Long shots should never be hurried. A player usually has plenty of time for them and he should take that time, steady himself, and shoot deliberately. As a rule, the long shot, when hurried, is simply throwing the ball away.

A player who can cage one out of three long shots in practice is better than the average. In a game, one out of eight go through the hoop, although there are times when a player seems to be just right for the play and will cage two or three in as many tries.

The overhead one-hand shot can hardly be considered a fundamental because it cannot be used consistently even by expert players. The ball is held at arm's length, on the side of the body away from the goal, and tossed in an arc which passes over the head and almost in line above both shoulders. Now and then a man can use it well, but on the whole it may be considered an uncertain shot, to be used only in emergency, and more likely to fail than to succeed.

**Shooting Fouls.**—There have been many expert foul shooters but no two with exactly the same form. They all held the ball with the fingers, however, never with the palm of the hand. Some held the lacing up, others held it down. Some stood with the feet on the same line but spread a little apart, while others had one foot slightly in advance of the other. The best of them were those who made the least movement in delivering the ball. Inexperienced foul shooters squat low and use an exaggerated arm motion, but good ones as a rule use legs and arms very little, depending upon the wrists and fingers for force and direction. This is to be expected because the more muscles used, and the greater their range of movement, the greater the probability of error, since all these muscles must be coordinated to send the ball through the basket. The main need is practice, and plenty of it. The muscles can be taught the exact amount of force which each is to exert. When they exert that much and no more you have coordination but can learn it only by

practice. A foul shooter should practice every day, not only on the day before the game, and he should shoot after the practice, when exercise has put him in the same physical condition as when he shoots during a game. He should not stand on the foul line and shoot time after time, as the ball is thrown back to him, but should step back several feet after each shot, then come forward to the foul line, just as he does in a game.

Few coaches appreciate the importance of daily practice in foul shooting but it wins many games. If possible, two rival candidates should be set against each other, because shooting in competition makes them try harder and brings better results. If one player is allowed to do all the foul shooting he is likely to grow careless even without being conscious of it.

**The Dribble.**—Although the technique of the dribble is comparatively simple, few players become proficient at it. It is simply a matter of batting the ball to the floor, and on the rebound batting it again and again as the player races along, but it is difficult because this must be done almost as fast as a man could run down the floor unencumbered by a ball. The ball should not be batted by the palm of the hand, but by the fingers, held together and stiffened. Batting by the fingers gives better control than batting by the palm. The object, of course, is to take the ball down the floor for a shot or a pass without losing possession of it, or without breaking the rule against carrying the ball. It must be done at great speed or the dribble will be intercepted and the ball lost. Success depends more upon the angle at which the ball is batted to the floor than upon any other single factor. If the angle is too small the player's speed is spoiled, but if it is too great he will not overtake the ball. Beginners invariably err in either of these directions, and often in both. The ball must be batted to the floor at an angle that will bring the rebound waist high just as the player, going at top speed, is in position to bat it again. Some

men seem to be gifted with the ability to do this, but with others it requires an immense amount of practice.

Coaches differ as to the value of the dribble. Some will not use it at all, while others build the game around it. The majority, however, consider it a valuable asset if properly used, that is, either to approach the basket for a shot when the player has a clear floor or as a means of getting away from an opponent and making a pass, and, when every other player is guarded, to give a teammate the chance to get free. It has come into disfavor with many coaches because few players who are good at dribbling know when to carry their dribble through to a shot, and when to stop and pass. Time and again players dribble the length of the floor, only to be intercepted as they are about to shoot, whereas if they had stopped and passed just before the last dribble the play would have been successful. There is a fascination about the dribble which leads the player to attempt to carry it through.

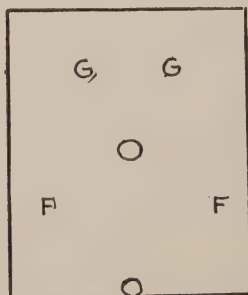
This is not the only objection that has been made to it. Many coaches claim that passing is both surer and faster. The writer does not pretend to decide the question. He has seen invincible teams whose attack was based upon the dribble, also invincible teams which did not dribble at all, and invincible teams which used the dribble only with a clear floor, or as a means to a pass.

**How to Whirl and Dribble.**—The instant you get the ball, turn on the ball of either foot, swinging the other around and away from the direction in which opponent is coming. Reach the ball far out and start the dribble at once. If you are right handed it will be easier for you to turn on the left foot if an opponent charges from in front. If he comes at you from the side, turn on the foot nearest to him.

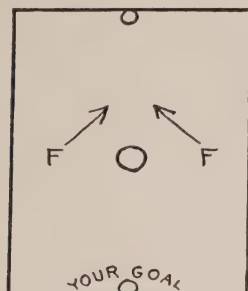
## CHAPTER XLIII

### HOW TO PLAY FORWARD

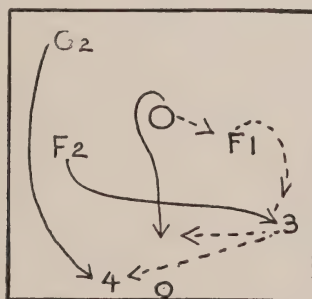
**Where to Stand on the Tip-off.**—Do not take a position half way between Center and the basket, stand near the middle of the floor and out to the side 8 or 10 feet away from Center. Since the opposing Guard must cover you, this leaves a big open space under the basket into which your Guard or Center can advance in the attack.



**Where to Play When Your Center Is Outjumped.**—If opposing Center consistently outjumps your Center play in line with the latter and charge into enemy territory on the toss. You will get the opposing Center's tip-off frequently, and when you do not, you are between him and his goal and thus in a position to prevent a basket. See diagram, page 265.



**Timing Your Play.**—This means choosing the right moment to dash away from your Guard for a pass.



The ball is tipped to F1, who relays it to F2 at the point marked 3. The success of the play depends entirely upon correct timing by F2. If the latter dashes across the floor on the toss-up his Guard will have time to reach him before F1 can relay the ball to him and the play is spoiled. But if F2 stands until just before F1 gets the ball, his Guard, not knowing what he intends to do, must wait. F2 then unexpectedly slips away, beats the Guard to point 3 and has time to take an overhead pass from F1, dribble and shoot, or relay to his own Center, or Guard at point 4. G2 should not start until F1 gets the ball.

**How to Uncover.**—When well-coached teams of equal strength meet, few goals are scored from the tip-off. Goals come after the ball has changed several times from the possession of one team to that of the other. Therefore Forwards must be well drilled in eluding their Guards.

To do this well requires wits as well as speed. Fool your Guard by doing the thing he is not expecting. Make a sudden dash down the floor and if he follows you closely, stop short and turn back a few feet, or turn to one side. There is no chance of getting a pass if you are guarded, so do not call for one.

When you receive a pass shoot if in a position to do so and follow after the shot, determined to get the ball if it misses the basket. Calculate where it will hit the backboard and be under it as it bounds back, ready to jump, because if you do not your opponent may. Either bat it in, or grab it and duck low, take a step to one side and shoot again. Many baskets are made in that way.

If you are guarded when you receive a pass, whirl away, turning on the foot nearest the Guard and pass, dribble or shoot.

The instant you pass the ball elude your guard for a return pass. This is one of the greatest points in the game and is the mark of a real player. Drill until you do it instinctively.

If you recover the ball from a scrimmage whirl and start a dribble to get away. Unless the floor is clear ahead, do not make the mistake of trying to dribble half the length of the floor because the Guard will overtake you just as you are about to shoot. A short dribble is better, just enough to get away, then pass, and uncover for a return pass.

Only an exceptionally fast and clever player can dribble a distance successfully, and he must have a clear floor to do it on.

**Crossing the Floor to Elude a Guard.**—Some players use this plan very effectively, starting down one side of the

floor and suddenly swinging in a wide circle across to the other side. It loses an inexperienced Guard, leaving the Forward free to take a pass.

When opponents have the ball your work is that of a Guard. Find your opponent at once and do not hang back hoping that some one on your team may get the ball and shoot it to you. That may happen, but what is more likely, your opponent being free, the ball will be passed to him and he will make the goal.

## CHAPTER XLIV

### HOW TO PLAY GUARD

**Where to Play.**—The first fundamental principle of Guard play is, be between your man and his goal when the other team has the ball. On the tip-off and in your half of the floor play either right at his inside elbow, or three or four feet back of and inside of him. It worries a Forward to be closely guarded and weakens his play. On the other hand, if the Forward is clever at whirling and dribbling the Guard should not be too close. Of course if your Forward runs back into his own territory you should not follow. If he is faster than you he would then break away and beat you to the basket. Wait for him, about the middle of the floor but follow further into his territory if he is good at long shots. Be cautious about following a faster man far into his half of the floor. Nevertheless he must not be allowed to shoot from there or to stand indefinitely with the ball in his possession, waiting to pass because some one of his team will break away, take the pass and make a goal. Under such condi-

tions approach cautiously, and if he does not start close in but be ready to turn and guard. When he and his whole team are circling around, passing the ball in their half of the floor they can do no harm, but if two or three of them are in your half, maneuvering to get free, you must guard your man if he is waiting to pass.

When your team is attacking and you are the stationary Guard, regulate your position by that of your opponent. Stand where you can dash forward and intercept a long pass to him or cover any movement he may make. If he plays up near the basket, drop back to the inside of him and about four feet away, keeping an eye on him and on the play. If he plays up near the middle of the floor, move up a little closer. If you rush forward as he takes a pass, watch that he does not whirl and dribble away from you. Never play in front of your Forward with the idea of intercepting a pass, as you cannot see what he is doing. He may slip to one side, get a wide pass or one over your head, make a dribble and cage the ball. Generally speaking, each man is responsible for his individual opponent. Play where you can guard him and at the same time watch the ball.

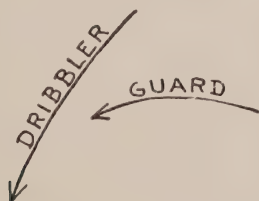
**How to Play When Guarding Two Men.**—Sometimes a stationary Guard is caught between two men, one dribbling down to the basket, the other, having broken away from his man, coming down the other side of the floor. The Guard is then in a very difficult position. If he charges the dribbler, the latter will pass to the other, who will score. If he guards the other the dribbler will score. The fundamental rule of defense is to take the most dangerous man, but here they are equally dangerous. The best thing a Guard can do under such circumstances is to play about 8 feet in front of his basket, wait until the dribbler is about to shoot, then make a desperate bluff at charging him and instantly, without waiting to see whether he shoots or passes, turn and guard the other man. This generally succeeds, because if a pass is made

the Guard is in time to cover it, or if a shot is made it will be hurried and likely fail and the other Guard is at hand before the attempt can be repeated.

**Overrunning.**—One of the most common faults is overrunning the Forward in a charge so hard that he can whirl and dribble away, as the Guard passes. To avoid this, check your speed within about six feet of him. The impetus of your charge will bring you close and the check will give you control, so that you can cover any move the Forward makes. Do not turn your back to the play but stay in position to see what is going on.

**Following a Dribbler.**—If a dribbler gets away from you do not follow behind him or you are almost certain to foul. He is nearly always obliged to move diagonally or in a circle so try to pick the spot from which he is likely to shoot and run for it, crossing the floor at an angle.

**How to Meet a Dribbler.**—If you are playing back and a dribbler comes down the other side of the floor do not rush to intercept him at a right angle as you may foul or he may swerve and get away from you. Converge towards him, running along with him, then reach out your arm, the elbow in front of him, and take the ball away as it bounds up.



**Leaving Your Man.**—Do not leave the man you are guarding to follow the ball as he passes it to another. It makes a Guard look ridiculous. The first man will simply uncover for a return pass and the Guard is left. When your Forward cuts across the floor as he comes

down with his team in the attack, cross over behind your own men until opposite him, and wait.

**Guarding an Out-of-Bounds Opponent.**—The danger lies, not in the pass he makes into the field of play, but in his handling of the return pass. Therefore give your attention principally to the latter. Do not play opposite him. Stand about four feet nearer to his goal and you can easily guard him as he dashes in for the return pass. Let him pass the ball in unobstructed. If you play opposite him the chances are he will pass it in anyhow and he is in a better position to slip by you.

**When Opponents Are Throwing Fouls.**—Don't wait for the ball to drop if it misses. Jump and grab the ball, whirl, and pass it to one of your men.

**When to Attack.**—Except in out-of-bounds and tip-off plays there is no set rule. The Guards attack almost as often as the Forwards and a Guard must sense the opportunity and move like a flash when it appears. Conditions constantly arise, when, his team having the ball, a Guard is momentarily uncovered, and can take a pass and score.

The two Guards must play together, one in the attack, the other back under the goal. Their respective positions on the floor often determine which should go into the attack. Sometimes the one who intercepts a pass, even though further back, should receive a return pass and the other drop back. Usually one will be better guarded than the other and should play back while the other takes his place. Usually one is a better shot under the basket and, all else being equal, he should be the one to attack.

When a Guard goes into the attack he should never remain under the basket to jump for the ball if the shot fails, as a Forward does. He should throw and instantly circle out to the edge, ready to return the ball if it comes out, or to guard if opponents get possession of it.

## CHAPTER XLV

### HOW TO PLAY CENTER

**The Tip-Off.**—Timing your jump on the tip-off is of the utmost importance. Observe how the referee holds his hands in tossing the ball, how high he usually throws it, and any peculiarity in his motions. This will help you to time your jump so that it will be neither too soon nor too late. Good timing often determines which Center will get the tip-off. If your jump is weak at first you can add several inches to it by study and practice on the details connected with it—how low to crouch; whether to face square to the front, or half sidewise; and how to hold your arm behind your back so that it will not weaken your spring.

**Placing the Ball.**—Find out where your Forwards and Guards like to have the ball placed, and practice placing it exactly at that spot. When successful on the tip-off slip around your opponent and get into the attack at once. If you do not get the tip-off, drop back a little and guard the opposing Center. When your team secures the ball elude your Guard at once, and get into the play. When the opponents secure the ball guard the opposing Center.

**Long Shots.**—Always follow up long shots, whether made by yourself or by a team-mate, unless the opposing Center stays back. In that case it is not safe for you to go in under the basket because an opponent may secure the ball and pass it to your man, who, being unguarded, will score.

**Foul Shooting.**—Be under the basket when your team

is shooting fouls. As the tallest man you have a good chance to jump and bat the ball if it misses.

Except on the tip-off your play is similar in most particulars to that of the Forwards.

## CHAPTER XLVI

### GENERAL RULES IN BASKETBALL

**Loose Ball.**—If the ball is loose, get it, even if you have to dive for it. When you recover it, swing around, turning your back to the Guard, and bend over so as to keep the ball out of reach and watch for a chance to pass.

**Shooting Fouls.**—If the ball misses, jump up and bat it into the basket or catch it and while still in the air give it a short whirl, with fingers and wrists, into the basket.

**Held Ball.**—On the jump get the ball at any cost or tip it over your head to a team-mate behind. This backward tip is frequently more successful than any other in any play except at center.

**Keep in Motion.**—When your team has the ball, do not stand and wait for something to happen. Keep moving. Get into the play.

**Practice.**—A team should practice two hours a day, six days a week, for development during the first six weeks of the season. Later, after they have learned to play together and get into condition, the practice period can be shortened.

Half an hour daily should be given to shooting at the baskets. A player cannot do too much of this and the more he tries it the better he will shoot. The result of eye, nerve and muscle training in throwing from all angles

at varying distances with one or both hands and learning to pass and dribble will be very gratifying. A part of every training period should be devoted to quick, hard passing because accuracy is necessary to a winning team, and this training develops sure handling of the ball. In important games, chances to score are lost frequently by fumbling within shooting distance. The value of thorough training in this branch of the game cannot be overestimated. In passing, line up on opposite sides of the floor and pass as hard and straight as possible for ten minutes. Then charge up and down the floor by twos, passing on the run.

Next, run up and down the floor, five men at a time, passing to each other; sometimes circle around and pass promiscuously to any man. Then rehearse old plays or take up new ones for twenty minutes. Next line up two squads each trying to keep the ball away from the other but making no attempt to cage it. Go through this without fail every day for the first three weeks, and at intervals later. It is the finest kind of training in eluding Guards, passing, and guarding, and it develops tip-top condition. It is harder work than playing because there is no rest. The squad that has the ball is in motion all the time, and the other squad is trying to recover it. When that squad does get the ball the action is of course reversed. Follow this with a few minutes of goal tossing and then play a fifteen-minute game. Gradually increase the length of the game from day to day up to thirty minutes.

Either rest or do nothing but throw goals for fifteen or twenty minutes the day before a game, depending upon the condition of the players.

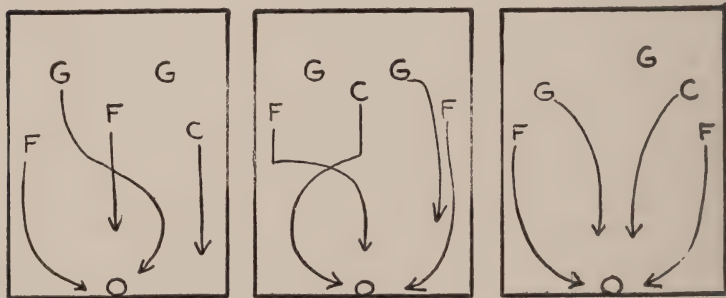
As the season advances and the boys become proficient in handling and passing the ball, give less time to such practice and more to perfecting team play.

**Team Play.**—Select the principal players of a team as soon as possible, and play them together at least a part of

every scrimmage. In this way they learn each other's style of play, each knows what the other is likely to do and where he is to be when the team is in a game. The result is team play.

**Referee.**—Have a strict referee in all practice games because a careless referee, or one who fails to call fouls, is a big handicap to a team. If sharply handled in practice the team will learn how to play its hardest without fouling. This point is too often overlooked in coaching. During practice, watch one man at a time. In this way you can discover and correct his faults.

**The Attack.**—The Five Man Attack is the strongest. The Guards enter into this attack, one going down the



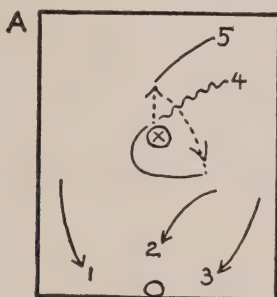
floor while the other stays back, usually near the foul line. There is no set rule to determine which Guard shall advance and either seizes the opportunity as it occurs, makes his shot or pass and at once circles back. Both are never in the attack at once. The Guards never remain down under the basket as a forward does. Three men under the basket are enough and more than that are in each other's way. If the opponents do not guard a rear Guard his team has four men in the zone of attack against three, and its chances to score are that much better.

The Guard does not attack on the tip-off unless the signal calls for a guard play or unless he should intercept

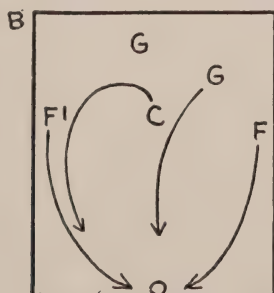
the ball. He guards the Forward until the play begins.

Should opponents secure the ball every man instantly turns from attack to defense, no matter what his position on the team. Every player has a man to guard and must guard him, intercepting the ball if he gets a chance.

There are several styles of the Five Man Attack; shown by the following diagrams and those on page 274.

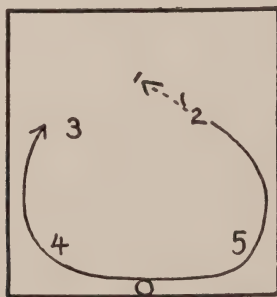


A—Three men ahead of the man dribbling. One man about 6 feet behind him. No. 4 is the dribbler. When about to be stopped he bounds the ball back to No. 5 and dashes around his opponent (X), for a return pass. No. 5 thus has any one of four men to receive a pass.



B—Here is an attack based on the very effective principle of two men covering the same section of the floor, one following 6 to 8 feet behind the other. If one is not free the other should be: C and F1 are the two men. With two men playing thus they can by practice manage to have one free at nearly all critical moments in a game.

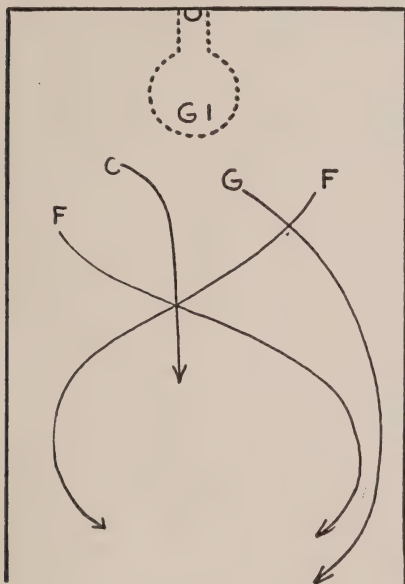
The following attack does not advance with a rush. All five men take part in it, circling around, passing the ball, and advancing gradually. Eventually some one gets free and shoots. It is a good attack, easy on the team and puzzling to opponents, even after repeated use in the same game.



No. 2 passes back to No. 1 then runs as shown. No. 1 moves forward, dribbling a pace or two, and watches for an opening while No. 3 moves back of No. 1, to take the ball if the latter is charged. Nos. 4 and 5 circle in the same way, 4 to the right, 5 to the left.

In the following attack, the Forwards cross the floor, the Center goes down the middle, and a Guard down one side, the other Guard remaining under the basket instead of circling out.

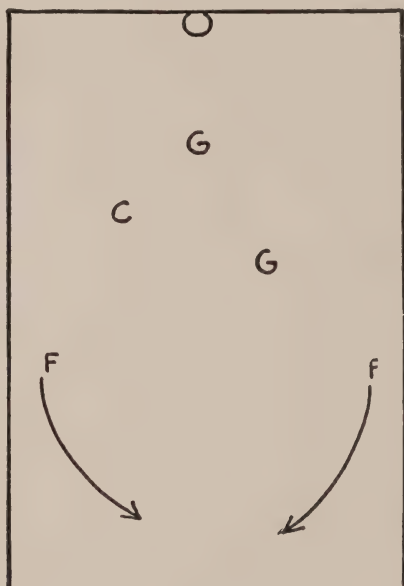
While this attack is strong it results in a comparatively weak defense, since G1 cannot guard opponents who may get free and come down both sides of the floor.



In the following attack the Center and Guards pass to each other, gradually to within striking distance, when either Forward makes an opportunity for a sudden dash under the basket.

Some teams, composed of men who have played together for two or three seasons, have a fast dribbler who can use a change of pace, while the other players lead their opponents away from him. This attack requires long experience. The dribbler maneuvers so as to receive the pass when quite near his Guard, so that if the latter charges he can swerve to one side and start again, going at top speed. Sometimes he carries the dribble through to a shot, at others he passes to a team-mate who has broken away from his Guard and timed himself to take the pass just before the dribbler can be interrupted. This is good basketball and the hardest to stop. Often the

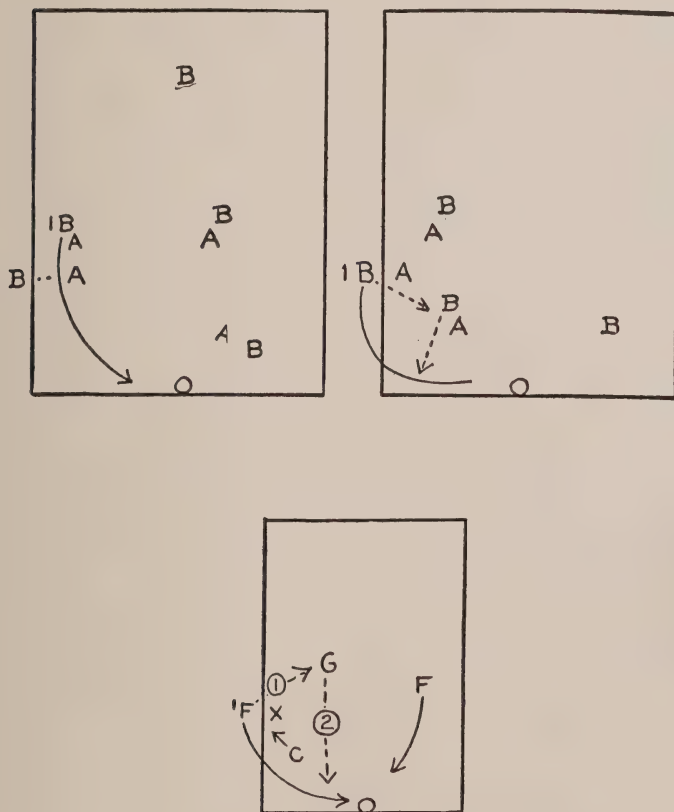
dribbler gets the pass just as the opponent is upon him, whirls, pivoting on one foot, and dashes away to a pass or dribble.



**Out-of-Bounds Plays.**—When the ball goes out of bounds near your basket, get it in as quickly as possible, and then elude your Guard for a return pass.

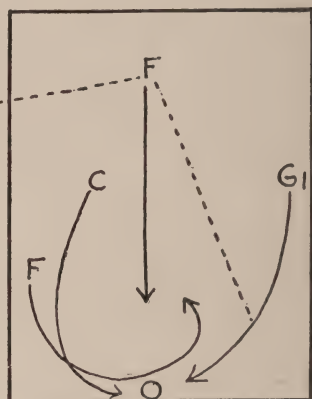
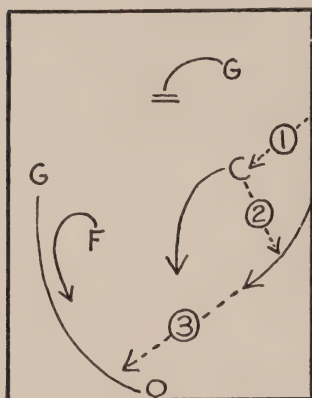
When out of bounds near the opponents' goal, get the ball in quickly but not so quickly that your team does not have time to take position for a predetermined attack. Some of the best plays originate with out-of-bounds play. To get the ball in quickly from out of bounds is a fundamental principle of the game, but this cannot be done unless the men are in position to take the pass, so when the ball goes out of bounds every man except the one who is to return it should take his position. Very few teams are well drilled in this.

Out-of-Bounds Play near your own goal is shown as follows:

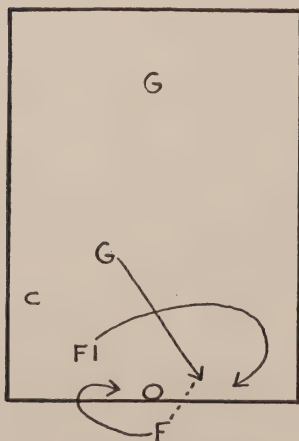


These plays should be perfected in practice games.

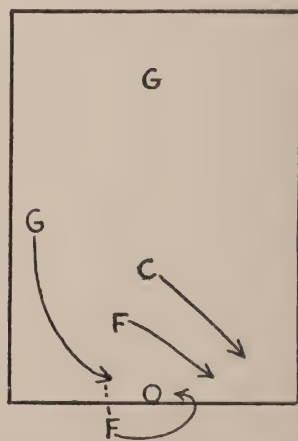
Out-of-Bounds Plays near the opponents' goal:



Out-of-Bounds Plays under your own goal:

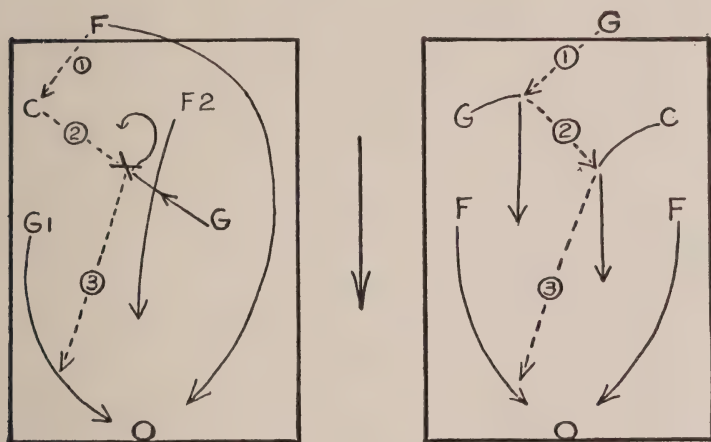


FEINT TO PASS  
TO FI



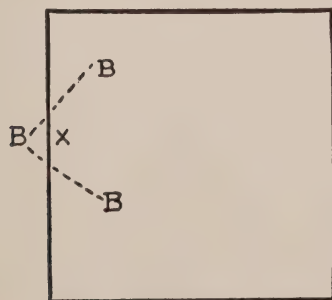
FEINT TO PASS TO THE  
RIGHT, TO F<sup>nd</sup> C

Out-of-Bounds Play under the opponents' goal:



F passes to C, then runs as shown.  
 C passes to G, who has run to position X.  
 G passes to G1, then drops back.  
 G1 starts *when C gets the ball*.  
 F2 does not start until G has run to X.

Always have two men to take the pass-in from out-of-bounds, stationed at such an angle that the opponent cannot interfere with the pass to both of them.



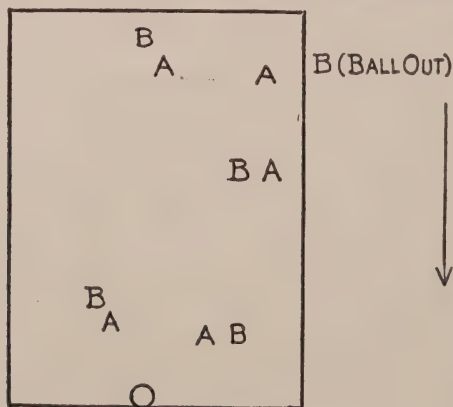
## CHAPTER XLVII

### DEFENSE IN BASKETBALL

There are two systems of defense, namely, the Close Defense and the Curtain Defense.

In the Close Defense each player guards his man the instant opponents get the ball and follows him constantly, so that he can neither pass nor shoot. When the ball is out of bounds, those guarding near-by opponents play very close but those guarding distant men stand about four feet away to prevent them breaking away for a long pass.

The theory of this defense is, that if an opponent is so closely guarded that he can neither receive the ball, pass nor throw it, he certainly cannot score, but its weakness lies in the fact that the defensive team must play over



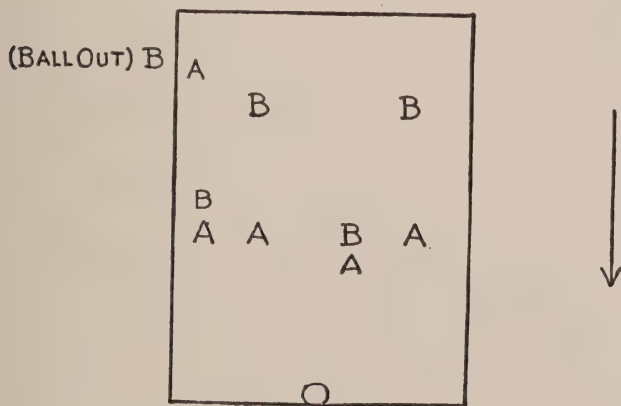
the whole floor, doing a tremendous amount of work. There is also difficulty in guarding a fast player who, when guarded at close range, may break away in his own territory, leave his guard behind and be free, since each of the other players must guard his own man.

**The Curtain Defense.**—In this defense a curtain of defenders lines up across the floor when the opponents secure the ball.

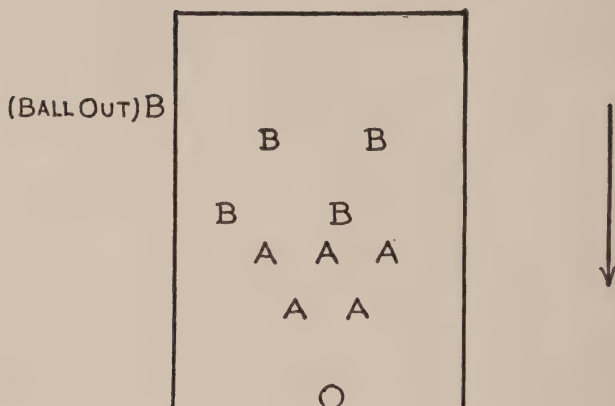
The theory of this defense is, that opponents are not dangerous in their own half of the floor even though they have possession of the ball, and therefore it is unnecessary to follow them; that they can be successfully intercepted once they pass the middle of the floor; and, that this saves the energy of the defensive team.

It is weak only when unusually long shots are made.

The players take positions about the middle of the floor, each opposite an opponent who can be intercepted as he advances.



In the following plan the players take positions as shown and guard sections of the floor, taking any man who comes through.



Teams using the Curtain Defense must realize the necessity of guarding closely any men who can make long shots, even though this involves going into their territory.

# TENNIS

## CHAPTER XLVIII

### FUNDAMENTALS

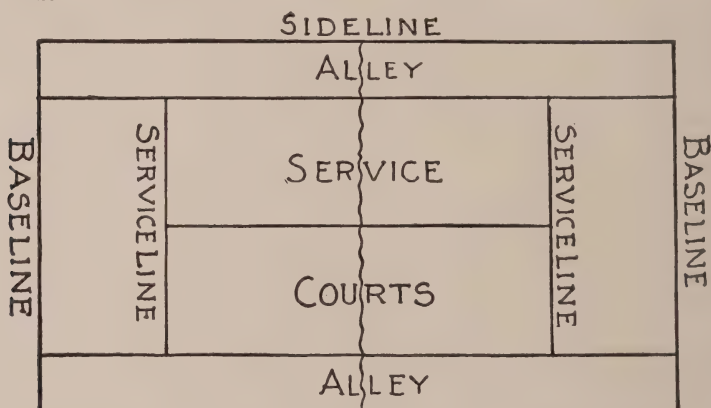
In the discussions which follow the writer wishes to make acknowledgments to Messrs. Raymond A. Cox and Wilson R. Flint, ex-captains of Allegheny College Tennis teams, for valuable information and suggestions.

**The Court.**—The full size court is 36 feet wide by 78 feet in length. There should be at least fifteen feet of extra space at each end, to allow the players to run back for high bounds or a fast ball, and at least six feet at the sides. A net, which should be three feet high at its middle, and three feet six inches at the sidelines, divides the court into two equal parts. The net is usually hung from posts planted about three feet beyond the sidelines.

The lines at the ends of the court are called "base-lines;" those at the sides, "sidelines." Four and a half feet inside of the sidelines, parallel lines are drawn from end to end of the court. These lines become the sideline boundary when Singles are played, that is, when two people play against each other, and any ball which lands outside of them scores a point against the one who struck it.

The lanes between the two sets of sidelines are called alleys. When four people play, two against two, the game is called Doubles, and balls which fall into the alleys during play are good. All service balls, however, whether in Singles or Doubles, must fall in the service

courts. The service courts are 21 feet long by  $13\frac{1}{2}$  feet wide, and there are four of them, two on each side of the net. Twenty-one feet from the net, on either side, and parallel with the baselines, are lines which mark the limit of the service courts. These are called the Service lines.



The playing space for Singles is 27 feet wide by 78 feet in length; that for Doubles, 36 feet wide by 78 in length.

In both Singles and Doubles, balls which strike the boundary lines are counted just as though they had struck inside of the lines.

The lines which mark the court into its various sections are usually drawn on the ground with lime dissolved in water, although pulverized dry lime is sometimes used. When no machine is available for marking, the simplest way to mark the court is to peg the corners and points of intersection, attach a cord to the pegs, sweep along the cord to remove loose soil, then dip the broom in dissolved lime and paint the lines along the cord. A neat two-inch line can be laid in this way.

Two-inch tape, held to the ground by wire cleats, can be used for lining a court.

**Serving.**—The game is played with rackets and covered rubber balls. The players knock a ball back and forth across the net, each trying to hit it so that it will drop into opponent's court in such a way that the latter will either be unable to hit it, or will hit it into the net or out of bounds. Every time a player succeeds in making



ILLUSTRATION 56. THE SERVE

Note the position of the body, weight on the left leg, right foot in the air, coming forward with the stroke

an opponent miss, he scores a point. If, on the contrary, he himself hits the ball into the net or out of bounds, the point counts for his opponent.

To start the game, the player who wins the right to serve takes a position somewhere behind the righthand half of his baseline, tosses a ball up and hits it before it drops to the ground, knocking it diagonally across the

net into his opponent's righthand service court. If the first ball fails to go into the court, it does not count a point against the server because two chances are allowed. If the second ball also fails to drop into the court, a point is scored for his opponent, and the server moves over to the lefthand half of his baseline and tries again, this time



ILLUSTRATION 57. FINISH OF THE SERVE

The racket swings down until it will be to the left of the body  
at the finish of the stroke

serving into his opponent's lefthand service court. This placing of the first or first two balls, is called the service.

When a service ball falls into the proper service court, play immediately begins, that is, the player on that side of the net knocks the ball back, and it is returned back and forth until one player or the other fails to return it so that it strikes the ground inside the boundary lines.

The player who is opposed to the server may not run up into the service court and hit a served ball before it strikes the ground. He must wait for it to bound, and must hit it on the first bound or lose the point. But once a ball is in play, that is, after a service ball has been returned, any player may hit it either before it strikes the ground or on the first rebound. No score is counted by hitting the ball on or after the second bound.

**Counting.**—The first point counts 15, the second also 15, the third 10, and the next wins the game, provided the opponent has not also scored 40 by that time. If each player has 40 the score is “deuce,” and one player or the other has to make two points in succession to win the game. If each wins one point it becomes deuce again, and so on as many times as this may happen.

When the first point in a game has been won the score stands “15—love,” love meaning zero. If two points are won in succession by the same player the score stands 30—love, and so on. But if points are won alternately, the score stands 15—all, or 30—all, or deuce, as the case may be. Of course it may stand 30—15, 40—30, and so on, as either player makes, or fails to make, his strokes.

In calling the score, that of the server is always called first. For example, if he has won the first point the score is called 15—love; if on the contrary, the other player has won the first point, the score is love—15.

The player who begins the service continues to serve until the game is ended, when the serve passes to his opponent, each in turn serving during one game, and neither ever serving two games in succession.

Should a player win six games before his opponent has won five, he wins the set. But if the games stand five all, one or the other must win two in succession to win the set.

Matches are usually two sets out of three, but sometimes three out of five.

**The Service.**—In serving, the object is to deliver a ball

which the opponent cannot return. Consequently most players take a chance with the first serve and hit the ball as hard as they can, trying to place it either to opponent's off hand, or so far to one side that he will be forced off his balance and make a weak return. If the first ball fails to strike within the service court they serve the second more carefully.

Should either ball hit the net and then drop into the proper service court, they are entitled to serve it over, and this holds good as many times as it may happen. A ball which hits the net and drops into the service court is called a net ball. Should the ball hit the net and drop outside the service court there is no chance to serve it over.

A strong serve is a valuable asset, and players are continually trying to develop service strokes impossible to return. The beginner should not be too ambitious in doing this. He ought to try to master the plain overhead serve first, because otherwise he will waste the first ball most of the time, and will be forced to make a weak second serve with the probability of having a point scored against him. Most players take too little pains with their first serve. They merely hit and trust to luck.

The second serve can be delivered so as to redeem in part the failure of the first, but a plain serve which strikes in the middle of the court and bounces waist high, is open to a vicious return, which wins the point or at least puts the server on the defensive. Try to place the ball either to the opponent's off corner, where it is difficult to return, or to his right, close to the net with a low bound, so that he will hit it into the net or knock it out of bounds as he runs up to meet it. All players should try to develop the second serve until it becomes almost as good as the first, and to do this should acquire the habit of serving overhead.

**How to Hold the Racket.**—Grasp firmly but not rigidly, with thumb and fingers at the extreme end of the handle,

or not more than an inch up. At first it will seem to be too heavy, and you will want to grasp it further up the handle, but doing so will hinder you in learning to make good strokes. Some players place the thumb against the side of the handle but most players grip the thumb around the handle.

**How to Stand.**—Stand easily, the right foot back if you strike with the right hand, the balls in your left hand, waist high, ready to toss, and the hand which grasps the racket hanging at your side.

**Where to Stand.**—The rules require you to stand back of the baseline in serving, and you may not take a step or shuffle your feet before making the stroke. The toe of your front foot must not touch the line, nor may you step over it until you have struck the ball. If you serve correctly, the vigor you put into the stroke will carry the back foot over the line, and your weight will come down immediately after the stroke has been made. You may stand anywhere you wish behind the baseline, but in Singles it is considered best to stand from six to twelve inches to the right or left of its middle, and as close to the baseline as you can get without touching it, and to the right if serving into the opponent's righthand court; to the left for the lefthand court. This is considered the best position because you are well placed to meet a return stroke to your right or left, and you can place the ball to the opponent's off hand better than if you were further out along the baseline. His off hand is the hand which does not hold the racket, and most players find it more difficult to return shots placed in that position.

In Doubles you can stand further away from the middle of the baseline because your partner protects his half of the court, and it is sometimes an advantage to do so in order to place the ball close to the net, at the opponent's extreme right or left, forcing him off his balance and leading him to make a return to your partner at the net, or an easy shot to you.

You must always serve across the court, that is, serve to the left when you stand on the righthand half of the baseline, and serve to the right when you stand on the lefthand side.

**The Plain Overhead Serve.**—The first point to remember is to reach up as high as you can, thus gaining a greater angle for the delivery of the ball and less likelihood of its hitting the net. To reach high you will have to rise on the toe of the front foot. Toss the ball moderately high, in front of your left shoulder (if a righthanded player), take a fullarm swing, and aim to hit the ball when it is above and in front of your head, the body bending forward with the stroke. Since you are serving diagonally across the court, and the ball is tossed in front of your left shoulder, you will strike across the body. Get accustomed to taking a fullarm swing, the arm, however, bending slightly at the elbow as you strike, and do not check the swing of the racket after it has hit the ball, but allow it to continue its momentum until it swings down to your side.

Do not try to make the ball skim the top of the net or try to bring the ball close to the net by sweeping the head of your racket downward. Do not be afraid to allow the ball to pass from four to six inches above the net in its flight and it will be more likely to land in the service court. Try to hit the ball with the middle of the racket, and to strike forward, thus causing your racket to roll over the ball, making it curve downward over the net, and jump as it strikes the ground.

After having mastered this serve so that you can place a hard serve in the court at least every other time, you should endeavor to acquire a more difficult serve, one in which you hit the ball back of your head, on the inside half of the racket, slanting the racket as you strike, in order to make the ball drop sharply and hop to one side. When you have acquired this, you may go still further and try to learn the American Cross Arm Service, in

which, as well as may be described in print, the arm is swung back straight and brought sharply across the face, hooking the ball as it makes the stroke. In this stroke the ball is struck by the outside half of the racket and is given an exaggerated bound to the side.

A player will learn other serves during actual play.



ILLUSTRATION 58. POSITION FOR RECEIVING

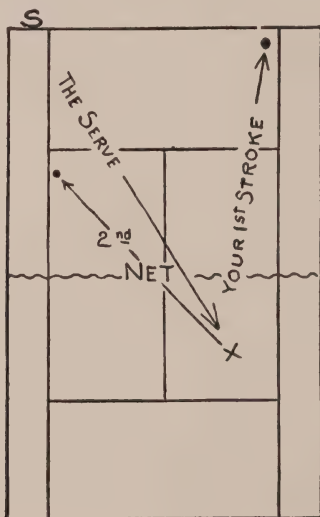
The player stands on the balls of his feet, racket gripped firmly, its throat supported by the left hand

Some champions have several different serves. A variety is desirable, for if a man has but one or two, his opponent may learn how to return them in the course of a match.

Every effort should be made to place the ball in a part of the service court from which an effective return is difficult or impossible. In the preliminary and intermediate stages of a player's development a fair amount

of speed in delivery, combined with good placing, is more effective than erratic swift service. Remember that the best serve is a hard, high bound to opponent's off side.

**How to Receive a Serve.**—Stand approximately on the baseline, about a foot or two from the alley, so as to be ready to reach a ball delivered to any part of the service court. Stand on the balls of your feet, the latter an easy distance apart, the body slightly bent, the racket held

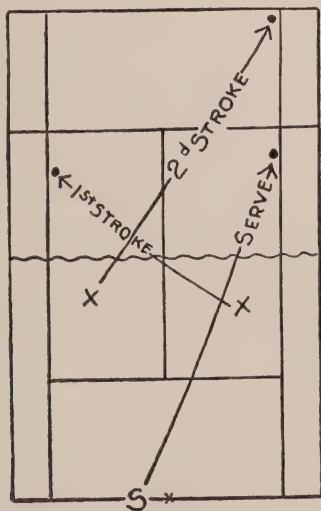


firmly but not rigidly, with the left hand supporting it ready for either a forehand or a backhand stroke. Be on your toes and alert, ready to meet any kind of a ball.

Should your opponent have an exceedingly swift serve, you will have to stand back of the baseline, perhaps some distance back. If, on the contrary, his serve has little drive you will have to move up closer to the service line to meet it. If the opponent has a swift first serve and a weak second one, play back for the former and up for the latter.

Step into the ball in returning the serve, that is, be moving towards it if possible. You will thus get more weight and better direction into the stroke. Endeavor to place the return to a point from which the opponent cannot reach it, or from which it will be difficult for him to make a strong return.

Most beginners make no attempt to place the ball. A serve like that can easily be returned to the server's off hand, and you should rush to the net after the stroke, striking his return across the court, close to the alley.



The serve to opponent's extreme off hand.

**How to Play after Serving.**—In playing singles some players stand about four feet inside the baseline and equidistant from the sidelines, being in a position to reach a return to either side of the court. Others rush to the net after every first serve. Still others, more cautious, go to the net after a serve which has landed in a position from which the opponent must make a weak return.

If you can make a good, hard baseline drive, it will be better for you to stay back and play for a chance to score on a drive.

If you use a serve which is difficult to return, and are good at returning the ball, rush to the net after every good serve, but now and then vary your play by staying back. Tennis is a game of wits as well as strokes and if you can keep your opponent guessing you have a better chance of beating him.

Never stand in the middle section of your half of the court, about ten feet from the net and extending to the same distance from the baseline. That is known as the Danger Zone. In the Danger Zone you are neither close enough to the net for a net play, nor close enough to the baseline to make a hard drive. You will have to meet balls in this zone many times in the course of play, but make it a point never to stand there. Be either in front of it or back of it. This applies to both Doubles and Singles.

In Doubles most players rush to the net after they have served, and the partners move up and down the court, side by side, as returns are made.

## CHAPTER XLIX

### STROKES IN TENNIS

**The Forehand Return.**—This stroke drives the ball with force, lifting it a foot or two above the net, yet bringing it down with a sharp curve. The stroke starts back of the hip, with a fullarm swing, the racket coming forward and up, the forearm turning to the left at the moment of impact, while the wrist turns until the knuckles are up. The racket does not strike the ball squarely, but at an angle as it is turning over. This is called the Lawford stroke and is best adapted to balls which do not bound more than thirty inches from the ground.

On waist-high balls, do not bring the racket up, but, starting with the same fullarm swing back of the hip, sweep forward in a plane parallel with the ground, striking the ball at the top of its bound, and roll the head of the racket over it. A righthand player turns the wrist from right to left, as in the stroke first described.

The roll is difficult to describe and difficult to acquire. As the racket sweeps forward, the short axis of its head is almost perpendicular to the ground, and at the moment of impact the head is twisted to the left (in the case of a righthanded player), the racket thus rolling over the ball.

Beginners can use a swing which starts but a short distance back of the hip, the arm rigid, and brought forward in a sharp motion, the elbow slightly bent and the forearm turning sharply to the left at the moment of impact. The stroke does not drive the ball so swiftly but a beginner gets better control and direction with it.

**The Backhand Return.**—This stroke is very difficult to

acquire. It is made with practically the same swing as the forehand stroke, but the racket is not swung as far behind the body. The illustration shows the Backhand return, but the racket should start farther back.



ILLUSTRATION 59. BEGINNING OF THE FOREHAND RETURN

The player meets the oncoming ball, racket swung back, ready for a full arm sweep forward, the racket coming forward and upward, and turning over

In both the forehand and the backhand return be sure to follow the stroke through.

**The Chop.**—In making this stroke the racket is held about head high, the arm almost rigid, and half bent. The stroke diagonally downward, and is a short chop. The racket is slanted so as to strike the ball at an angle of about 85 degrees. When struck, the ball spins towards the racket, and bounds low or skids when it hits the ground. Hit the ball hard and with plenty of drive. The

Backhand Chop is similar to the forehand, but delivered from left to right by a righthanded player.

**The Cut.**—The racket is held to the side of the body, and is swung forward in an easy motion, almost parallel with the ground. It cuts under the ball, which is thus made to spin towards the racket, and when it strikes the



ILLUSTRATION 60. FINISH OF THE FOREHAND RETURN

The racket is still turning from right to left, after the stroke

ground usually bounds straight up in the air, but sometimes back towards the net. There is no drive back of this stroke.

**The Lob.**—This is a high, arched ball, hit squarely at right angles, with an underhand swing of the racket. It is one of the most useful of all strokes and the aim should be to drop the ball well back in the court, with just

sufficient elevation to raise it above the reach of the opponent's racket. A high lob which drops near the net can be easily returned, although the novice often drives it into the net by bringing the head of his racket too sharply down. A correctly placed lob will make an opponent turn and run back, and will usually leave him in an awkward position for an effective return.



ILLUSTRATION 61. THE BACKHAND RETURN

The racket has come some distance forward. In setting himself for the stroke it was well around to the player's left

**The Smash.**—This stroke is effective at the net in meeting a weak return, or a lob before it bounds. In the latter the ball should be hit when above the head, and struck with great force, the player bending backward under the ball as it drops. If you hit the ball in front of the head you are likely to drive it into the net. Be under it, with

your body bent back at the waist, and strike when the ball is in line with the spot where your head would be if you were standing upright. Slant the racket at the moment of impact, in order to send the ball off to one side of the court, although if hit just at the right moment and at the right angle this is unnecessary, as the bound



ILLUSTRATION 62. FINISH OF THE BACKHAND RETURN

Note how the player has followed through, his weight on the right foot

will be too high for the opponent to reach. It is better to place the ball either to the side of the court or right at the opponent's feet, from which point it is difficult for him to return it.

It is easier for an opponent to cover the middle of the court than to cover the corners or sidelines, consequently the player should endeavor to place the ball in the latter

positions. If the opponent has returned the ball from one corner, you should send it to the opposite one, thus chasing him back and forth across the court, with the probability that his returns will be weak or out of bounds. After you have used these tactics for a time, he will begin to anticipate your return and will start for the op-



ILLUSTRATION 63. THE CHOP

The stroke is diagonally forward

posite corner as soon as he has made a stroke. Then vary your play by sending the ball to the corner from which he has just returned it, thus catching him off his balance. This is of course the first thought which should occur to a player. Such tactics are followed by experts while the average player ignores them, content merely to get his return into the court.

The best return you can make is to the opponent's

off hand. Very few players can return such a ball as well as one which lands on the side of the striking arm. This emphasizes the advisability of learning a good back-hand stroke, for if you must run in front of the ball to face it for a forehand stroke, you are at a great disadvantage.



ILLUSTRATION 64. THE CHOP

Finish of the stroke

It is better to play safe than to attempt to play brilliantly. Play safe and place all returns even though you do not get much drive into them. Of course, whenever you have time to get set, and the ball comes just right for a good stroke, try to win the point on it. More games are won in average tennis by this method than by any other. Too much emphasis cannot be placed upon placing all returns. Even a brilliant player becomes ex-

asperated when compelled to run back and forth across the court to meet carefully placed balls, and sooner or later loses his patience and makes a wild stroke.

The average player tries to win his point on every stroke. The deliberate player who has a few fairly good strokes, places his returns with fair speed, always where his opponent must play on the defensive, and waits until the ball comes just right. This is called playing for an opening.

**Condition.**—If you expect to engage in match play, get into condition early in the season, and play enough to perfect your strokes and to gain speed and stamina. The amount of play necessary to acquire this varies with each individual. Never do hard practice just before a match. Rest for four or five days.

**Clothing.**—A loose shirt, flannel trousers, heavy woolen socks, and elkskin shoes with rubber soles of medium thickness, are generally considered best for the game. Woolen socks absorb perspiration and prevent the feet from chafing, whereas cotton socks are likely to raise blisters if the player has very thin soled shoes. Some players prefer low cut shoes, others want a shoe which laces snugly around the ankle. It is a matter of choice.

Put on a sweater after play and keep warm.

**The Racket.**—Get a good racket, and see that the gut is tightly stretched. Beginners should have a racket which balances evenly when laid with the forefinger under its middle. Players using the Chop stroke should select a racket heavy in the head. The weight is important and the racket ought to be too light rather than too heavy. Twelve ounces is light, thirteen medium, fourteen rather heavy. Thirteen or thirteen and a half ounces is about the right weight for the average player.

**Care of Racket.**—Keep the racket in a press and carry it in a case. Never use it in the rain, nor allow it to lie on damp or wet grass, or to stand in a damp room. This will cause warping.

## CHAPTER L

### BUILDING A TENNIS COURT

Courts which will hold their surface and last for years, are expensive to build. The ground must be excavated for a depth of ten or twelve inches, and the excavation half filled with broken rock, pounded solidly into place. On this put a three or four inch layer of coarse cinders, or rock crushed to about the size of a small marble, and pound it down level. Then put on the top layer, which should be of clay loam and sand mixed, in proportions that will give a top surface which will be resilient, will not soften or crumble under play, and yet will be porous enough to allow the absorption of moisture. Grade the court towards the middle line, over which the net hangs, allowing a fall of four to five inches, and place drains below this line, under the rock foundation.

Very satisfactory courts can be built at little expense where a good clay-loam soil can be found on high ground with natural drainage, by removing the turf, levelling, and rolling. Courts which are built against a hill or in a depression must have artificial drainage no matter what the character of the soil.

Lay out the court north and south, so that neither player will have to face the sun.

Constant care is necessary to keep a court in good condition. Irregularities will form on the surface which will have to be swept or scraped, sprinkled, and rolled frequently.

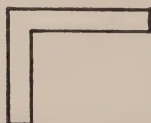
**How to Lay Out a Tennis Court.**—The following is a simple and entirely satisfactory plan:

Make a right angle of six feet or more, using perfectly

straight pieces of wood. Measure off one sideline, 78 feet, marking 18, 39, and 60 feet from the starting point. Peg the ends and marked places. From the middle of this line swing an arc of 53 feet,  $11\frac{1}{2}$  inches and lay out the end lines, 36 feet in length, to meet the arc. Peg the intersections (two pegs), and peg points  $4\frac{1}{2}$  feet from each end of the line (four pegs). Lay the second sideline, and peg the middle and 18 feet from each end (three pegs). Lay a twine and peg the middle of the service court lines, the crosslines connecting the 18 foot pegs (two pegs).

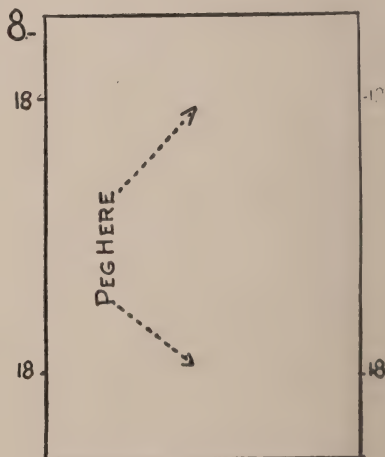
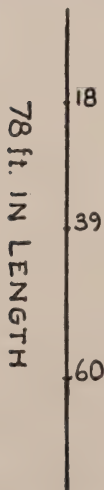
The court is now ready for lining.

1. THE  
RIGHT ANGLE

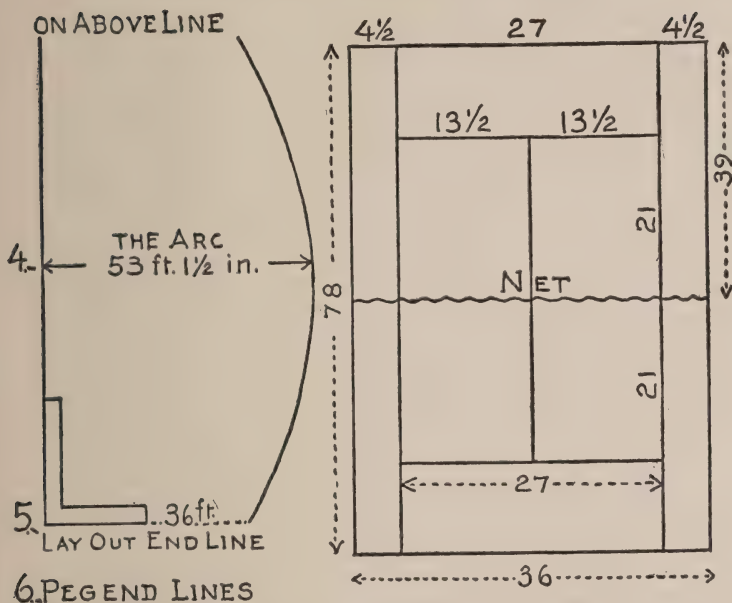


7. LAY SECOND SIDELINE AND  
PEG AS DIRECTED

2. THE SIDELINE AND ITS MARKS



3. PEG ENDS AND MARKED PLACES 9. THE COURT



## 6. PEG END LINES

LAYING OUT A TENNIS COURT.

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